S5215-2-F A

Report on Survey of New Hampshire Adults

concerning

Behavioral Risk Factors

1987 - 1991

Department of Health and Human Services

Division of Public Health Services

Office of Chronic Disease and Health Data

Bureau of Health Promotion

Report on Survey of NH Adults

concerning

Behavioral Risk Factors

1987 - 1991

Prepared by
The University of New Hampshire

and

New Hampshire Division of Public Health Services
Office of Chronic Disease and Health Data
Bureau of Health Promotion
6 Hazen Drive
Concord, New Hampshire 03301-6527

603/271-4551 or 800/852-3345, ext.4551

The Honorable Stephen E. Merrill, Governor

Harry H. Bird, M.D., Commissioner, Department of Health and Human Services

Patrick J. Meehan, M.D., Director, Division of Public Health Services

---

Publication Number 93 - 013

The report is a joint effort between the University of New Hampshire and the New Hampshire Division of Public Health Services. The University of New Hampshire under contract with the Division implemented the New Hampshire Behavioral Risk Factor Survey.

Contributors

University of New Hampshire:

Co-Project Directors

Jerry Vaske, Ph.D.
Formerly of the University of New Hampshire
Currently at Colorado State University

Linda Robinson, M.S., R.N.
Department of Nursing

Statistical Analysis, Data Entry and Coding

Michael Roth, B.A.

John Nelson, B.S.

New Hampshire Division of Public Health Services:

David Solet, Ph.D.
Assistant Director

Rebecca Bukowski, M.Ed.
Bureau of Health Promotion
Office of Chronic Disease and Health Data

Kay Zaso, M.P.A., R.N.
Chief, Bureau of Health Promotion

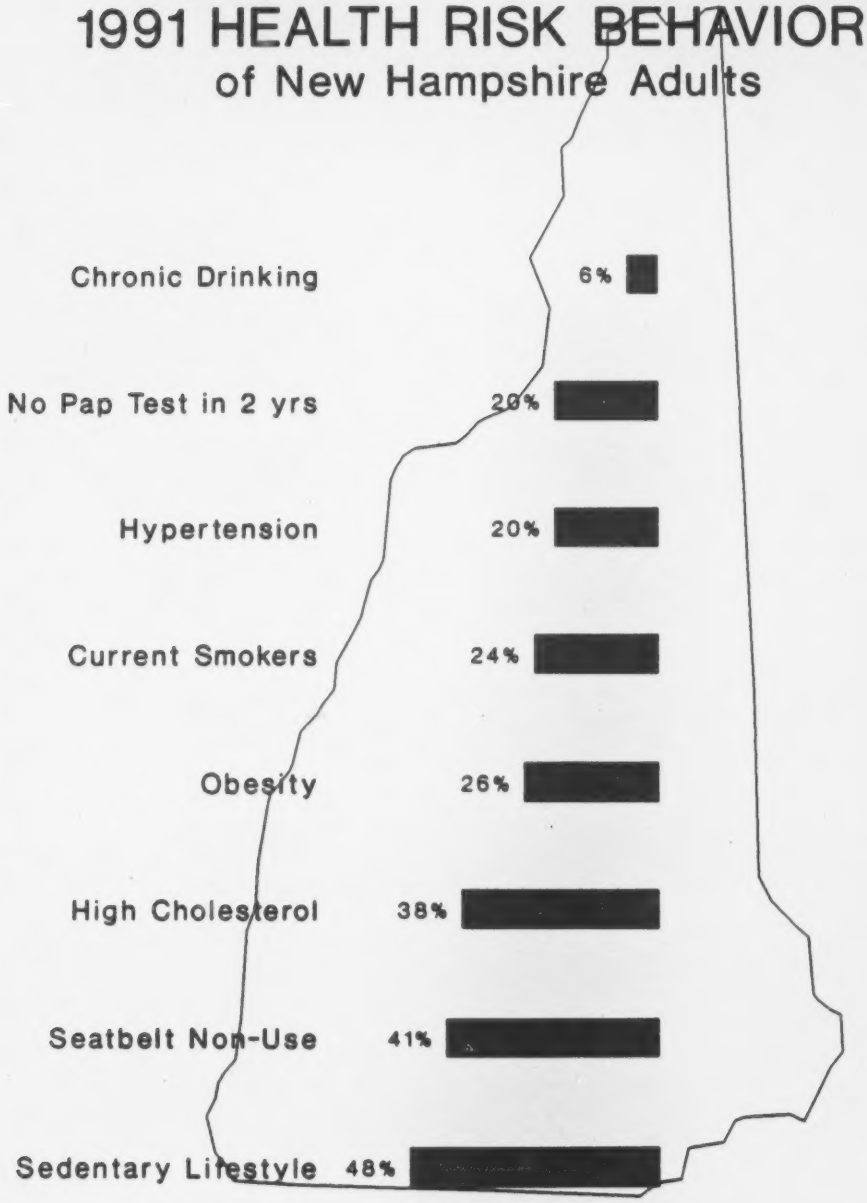
Larry Powers, M.A.
Bureau of Health Promotion

The NH Division of Public Health Services appreciates the cooperation of the residents of New Hampshire who participated in this survey.

Sponsored by the Centers for Disease Control and Prevention
Cooperative Agreement No. U58/CCU102103 - 06

SUMMARY OF SELECTED 1991 HEALTH RISK BEHAVIORS

of New Hampshire Adults



NH DIVISION OF PUBLIC HEALTH SERVICES

Contents

Introduction 1

Methods 4

Study Results

- **Smoking** 9
- **Sedentary Lifestyle** 15
- **Obesity** 21
- **Dietary Fat** 27
- **Hypertension** 33
- **Alcohol Consumption** 39
- **Seatbelt Non-use** 51
- **Cervical Cancer Screening** 57
- **Breast Cancer Screening** 63
- **Colorectal Cancer Screening** 71
- **Cholesterol Screening** 77
- **AIDS Awareness** 85

References 93

Introduction

Behavioral Risk Factor Surveillance System

The New Hampshire Division of Public Health Services, under a cooperative agreement with the Centers for Disease Control (CDC), has participated in the Behavioral Risk Factor Surveillance System (BRFSS) since 1987. The BRFSS surveys are designed to determine the prevalence of health behaviors related to the 10 leading causes of death among adults in the United States. Due to the absence of state-specific information about the prevalence of these health behaviors, participation in the BRFSS network has steadily increased. As of 1991, health departments from 45 states and the District of Columbia participated in the BRFSS project covering over 90% of the nation's adult population.[1]

The BRFSS surveys are conducted in New Hampshire under a contract between the New Hampshire Division of Public Health Services -- Bureau of Health Promotion, and the University of New Hampshire -- Department of Resource Economics and Development. Analysis and data from the years 1987 to 1991 are presented including trends over time by major demographics, five year composites by major demographics and geographic distribution by county. The report covers smoking, sedentary lifestyle, obesity, dietary fat, hypertension, alcohol consumption, seatbelt non-use, screening for cholesterol, cervical cancer, breast cancer, colorectal cancer and AIDS awareness.

Healthy People 2000

Healthy People 2000, National Health Promotion and Disease Prevention Objectives, is a product of a consortium of almost 300 membership organizations and all State health departments. The goals are to establish an agenda for preventing unnecessary disease and disability, and to achieve a better quality of life for all Americans. *Healthy People 2000* presents measurable targets or objectives to be achieved by the year 2000, and is organized into 22 priority areas. The first 21 priority areas are categorized into three broad areas: 1) to increase the span of healthy life for Americans, 2) to reduce health disparities among Americans, and 3) to provide access to preventive services for all Americans. The report is comprehensive in addressing health promotion and disease prevention objectives. Local communities and states may choose from among the recommendations to address their own priority needs.

The major objectives that coincide with the questions in the BRFSS are presented in the following pages. Please note that these objectives specify several different age ranges however the BRFSS data addresses only those NH residents age 18 and older.

Year 2000 Objectives Related to the BRFSS

Tobacco Use

* Reduce cigarette smoking to a prevalence of no more than 15% among people aged 20 and older.

* Increase to at least 50% the proportion of cigarette smokers aged 18 and older who stopped smoking cigarettes for at least one day during the preceding year.

Exercise

* Increase to at least 30% the proportion of people aged 6 and older who engage regularly, preferably daily, in light to moderate physical activity for at least 30 minutes per day (age 18 and older).

* Increase to at least 20% the proportion of people aged 18 and older and to at least 75% the proportion of children and adolescents aged 6 through 17 who engage in vigorous physical activity that promotes the development and maintenance of cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion (age 18 and older).

* Reduce to no more than 15% the proportion of people aged 6 and older who engage in no leisure-time physical activity (age 18 and older).

* Increase to at least 40% the proportion of people aged 6 and older who regularly perform physical activities that enhance and maintain muscular strength, muscular endurance, and flexibility (age 18 and older).

Weight Control

* Increase to at least 50% the proportion of overweight people aged 12 and older who have adopted sound dietary practices combined with regular physical activity to attain an appropriate body weight (age 18 and older).

* Reduce overweight to a prevalence of no more than 20% among people aged 20 and older and no more than 15% among adolescents aged 12 through 19. (age 18 and older).

Dietary Fat

* Reduce dietary fat intake to an average of 30% of calories or less and average saturated fat intake to less than 10% of calories among people aged 2 and older (age 18 and older).

Hypertension

* Increase to at least 50% the proportion of people with high blood pressure whose blood pressure is under control.

* Increase to at least 90% the proportion of people with high blood pressure who are taking action to help control their blood pressure.

* Increase to at least 90% the proportion of adults who have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high.

Alcohol Consumption

* Reduce alcohol consumption by people aged 14 and older to an annual average of no more than 2 gallons of ethanol per person (age 18 and older).

Seat Belts

* Increase use of occupant protection systems, such as safety belts, inflatable safety restraints, and child safety seats, to at least 85% of motor vehicle occupants. (age 18 and older).

Cervical Cancer Screening Testing

* Increase to at least 95% the proportion of women aged 18 and older with uterine cervix who have ever received a Pap test, and to at least 85% those who received a Pap test within the preceding 1 to 3 years.

Breast Cancer Screening

* Increase to at least 80% the proportion of women aged 40 and older who have ever received a clinical breast examination and a mammogram, and to at least 60% those aged 50 and older who have received them within the preceding 1 to 2 years.

Colorectal Cancer Screening

* Increase to at least 50% the proportion of people aged 50 and older who have received fecal occult blood testing within the preceding 1 - 2 years, and to at least 40% those who have ever received proctosigmoidoscopy.

Cholesterol Screening

* Reduce the mean serum cholesterol level among adults to no more than 200 mg/dL.
* Reduce the prevalence of blood cholesterol levels of 240 mg/dL or greater to no more than 20% among adults.
* Increase to at least 60% the proportion of adults with high blood cholesterol who are aware of their condition and are taking action to reduce their blood cholesterol to recommended levels.

Methods

The Questionnaire

In collaboration with participating states, the Centers for Disease Control have developed a set of questions for the BRFSS. The questionnaire has three components: 1) a set of core questions which are administered by all participating states, 2) a series of modules which states may elect to include during a given year's surveillance, and 3) optional questions developed by individual states to address issues of local concern. The Centers for Disease Control modules differ somewhat each year but most questions remain constant in the core.

Questions contained in the 1991 core were concerned with:

* Tobacco use
* Seatbelt non-use
* Alcohol consumption
* Physical exercise
* Hypertension
* Preventive health practices
* Women's health
* AIDS
* Demographics

During 1991, New Hampshire elected to include the following optional modules (not all modules are included in this report):

* County of residence
* Smokeless tobacco use
* Radon testing
* Cervical cancer screening
* Colorectal cancer screening
* Dietary fat

Sampling

A Modified Plus-One sampling design was adopted for the New Hampshire BRFSS. A stratified proportional random sample of the state's residents was selected based on the number of residential numbers in each of the relevant phone books for New Hampshire. Adult respondents were randomly selected from non-institutionalized residents who had phone numbers. Population distributions relative to the phone books that serve New Hampshire are shown in column 1 of Table 1. Column 2 indicates the number of interviews that were conducted each month for each phone book region in the state. A total of 125 completed interviews were conducted each month.

Table 1. Sampling strategy for the 1991 New Hampshire BRFSS.*

Phone Directory	Population by Directory	Percent of Population	Phone Numbers Sampled per Month	Total Phone Numbers per Directory
Carroll	107693	.102	13	156
Claremont-Newport	32088	.030	4	48
Concord	91055	.086	11	132
Haverhill	30896	.029	4	48
Keene-Peterboro	78057	.074	9	108
Lancaster-Littleton	50478	.048	6	72
Lawrence	41861	.039	5	60
Lebanon	36079	.034	4	48
Manchester	202161	.191	24	288
Nashua	160945	.152	19	228
Newburyport	10341	.010	1	12
Portsmouth-Dover	208013	.196	24	288
Walpole	10115	.009	1	12
Total	1059782	100%	125	1500

* The sampling strategy assumes 125 completed interviews per month, for a total of 1500 interviews per year.

Selection of specific numbers included in the sample involved the following procedures:

1) A random start was used for selecting pages within a given phone directory.
2) Once a page was identified, one of the four columns on that page was randomly selected.
3) The position on the page from which the number was drawn was randomly selected to the inch on the identified column of phone numbers.
4) The first residential phone number within the selected inch of text was chosen
5) After the aggregate sample was identified, a constant was added to each number in order to capture unlisted numbers or numbers that were added after the directory was published.

Interviewers made up to 20 attempts to contact a respondent at a given number before replacing it with the next telephone number. After contacting a household, the interviewer randomly selected a resident 18 years of age or older. If the person selected was not available at the time of the initial call, subsequent calls were made according to a specified protocol until the interview was completed.

Data Analysis

Tables presented in the body of this report compare major socio-demographic variables against each of the major risk factors. In addition, two general types of figures are displayed. One category of figures charts trends in the major risk factors over the five years of available New Hampshire BRFSS data (1987 - 1991). A second set of figures maps the distribution of responses by county. For these maps, data from all available years were combined to ensure adequate sample size within a county.

All data have been weighted according to age and sex by CDC to more closely reflect the population distributions established by the U.S. Census Bureau. Weighting the data helps to correct for any over or under representation in the sample.

Respondents who answered "don't know" or "refused" to answer were not included in the calculation of response percentages. Sample sizes, therefore, may vary from question to question.

Limitations

Telephone surveys represent a cost-effective method of obtaining descriptive data on a population; however, there are limitations associated with all surveys. First, a survey cannot measure the actual behavior of respondents, only self-reported behaviors. Reported behaviors

may differ from actual behavior if: 1) the behavior occurs only infrequently, 2) the behavior is not important to the respondent, or 3) there are social reasons for under reporting or over reporting certain behaviors (e.g., drinking habits).

Second, a telephone survey only reaches those that have telephones resulting in a sample that excludes certain kinds of people like the homeless.

Third, surveys are a descriptive type of research, that is the findings describe characteristics of the population studied. In this case, analysis of BRFSS can describe, demographically, the group in New Hampshire that smokes. It cannot, however, explain what causes smoking or demonstrate that smoking causes certain health problems like lung cancer.

Fourth, this survey cannot provide understanding of the impact of these behaviors on a person's quality of life, for instance how chronic alcoholism affects family relationships. Keeping these limitations in mind will help place the findings in perspective.

A final limitation relates to the size of the sample available for analysis. Examination of the data for demographic subgroups limited to a single survey year must be approached with caution due to the possibility of low numbers in some categories. Although the data is presented for these areas in the tables and interpreted and presented in the text, the reader must keep in mind that the percentages may be based on small numbers in certain instances. The 'Composite' and 'Geographic Distribution' sections aggregate the data for all available years thus providing a much larger sample for analysis.

This page deliberately

left blank.

Risk Factors

Smoking

BRFSS definition

Cigarette Smoking = Current smoker (ever smoked 100 cigarettes and smokes now.)

Cigarette smoking is responsible for more than one of every six deaths in the United States.[2,3] Smoking accounts for approximately 390,000 deaths nationally on an annual basis, including 21% of all coronary heart disease deaths, 30% of all cancer deaths, and 87% of lung cancer deaths.[4] Approximately 90% of the lung cancer cases in men, and 79% in women are attributable to cigarette smoking.[2] Mortality rates attributable to lung cancer for individuals who smoke more than two packs a day is 15 to 25 times higher than for those who have never smoked.[5]

Smoking is a prime risk factor for diseases of the heart and blood vessels, chronic bronchitis and emphysema, cancers of the larynx, pharynx, oral cavity, esophagus, pancreas and bladder, and other problems such as respiratory infections and stomach ulcers.[2] Smoking also contributes to high blood pressure by constricting the arteries.

In 1989, 5,205 deaths (62% of total deaths) in New Hampshire were due to diseases linked with smoking: cancers, cardiovascular diseases, respiratory diseases, infections and digestive disorders. Thirty five percent of these deaths were directly attributable to smoking. In the same year, 4,809 years of potential life were lost due to smoking linked diseases, and $220.3 million were spent on smoking attributable health care costs.[6]

Smoking during pregnancy has serious consequences for the developing fetus. A recent study found that New Hampshire women who smoke while pregnant are more than twice as likely as non-smokers to deliver a low birthweight child.[7] Women who smoke during pregnancy increase the probability of pre-term delivery by 14%, and the chances of all infant death by 10%.[2] The magnitude of this pre-birth influence is correlated with the number of cigarettes smoked. Females who smoke one or more packs per day increase the chance of infant mortality by 50%.[2]

At the time this report was prepared, the Environmental Protection Agency (EPA) has designated environmental tobacco smoke as a Group A carcinogen (a human lung carcinogen), a decision that is likely to generate demands for drastic new limits on smoking in worksites and public buildings. The EPA estimates that environmental tobacco smoke is responsible for about 3000 lung cancer deaths each year in the U.S. In addition, it is estimated that exposure to environmental smoke causes between 150,000 and 300,000 cases of bronchitis and pneumonia every year in young children aged up to 18 months. Children of parents who smoke are also more likely to develop respiratory problems and middle ear infections.[4]

1991 Findings

Twenty-four percent of the sample smoked in 1991. Smoking was more prevalent among men than women (27% compared to 20%) and among individuals with less than a college degree. Those with less than a high school diploma reported smoking prevalence rates of 32%, while prevalence for high school graduates was 30% and for those with some college was 26%. This dropped notably for those with a college degree (13%) and graduate school (11%). Persons aged 18 to 54 were more likely to smoke than those 55 and over. Those residing in households with incomes above $50,000 (16%) were substantially less likely to smoke than other comparable demographic subgroups. In 1991, groups that met or exceeded the Year 2000 objective of 15% included those with a college degree or more and those 65 years of age or older.

Trends

Smoking prevalence in New Hampshire has declined from 27% in 1987 to 24% in 1991 with a low of 22% in 1990. New Hampshire remains substantially above the Year 2000 Health Objectives for the Nation goal of 15%, but approximates the national average of 22%. The decrease is greater for females who reported a 5% decline than for males where rates dropped by only 1%. Also, during the same period all other demographic categories had decreasing rates except for a 3% increase among those aged 25-34, a 4% increase for those with household incomes of $35,000-$50,000, and an 8% increase for those divorced-separated.

Five Year Composite (1987 - 1991)

Up to age 44, smoking rates were higher than the state-wide average of 25%. Consistent with the national estimates, smoking prevalence was slightly higher for males, 27% compared to 23% for females. Individuals with less education were more likely to smoke than those with a college degree. The magnitude of this difference was most pronounced at the low and high ends of the scale. Thirty-five percent of those with less than a high school education smoked, compared to only 11% of the respondents who had attended graduate school. A similar pattern was observed for the income variable; those with lowest income (less than 10,000) have a prevalence rate of 26% compared to 17% for those in the highest bracket (over $50,000). Women who smoke exceeded men in only one area (postgraduate) and the following subgroups had prevalence rates nearly as high as comparable male rates: women aged 35-44, 65 plus, those who graduated from high school and those with higher incomes.

Geographic Distribution (1987 - 1991)

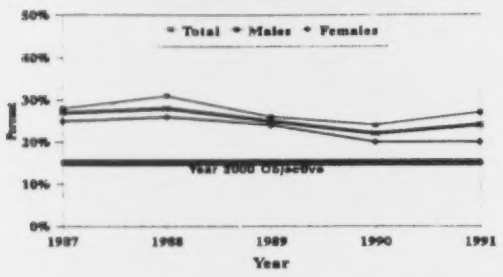
The lowest rates were noted in Grafton county (21%); the highest were observed in Cheshire (28%).

Table 2. Prevalence of Smoking by Major Demographics: NH BRFSS: 1987-1991

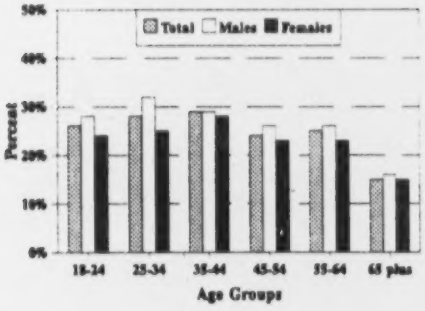
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (Weighted Data)					
Total	27	28	25	22	24	25
Age						
18 to 24	28	35	21	22	23	26
25 to 34	27	30	30	25	30	28
35 to 44	34	32	27	25	29	29
45 to 54	28	27	27	18	23	24
55 to 64	26	27	27	26	18	25
65 plus	17	15	16	14	13	15
Sex						
Male	28	31	26	24	27	27
Female	25	26	24	20	20	23
Education						
Less than H. S.	33	40	40	31	32	35
H. S. graduate	32	34	28	28	30	30
Some college	30	31	24	20	26	26
College	15	10	15	16	13	14
Graduate school	14	8	15	8	11	11
Income						
Less than $10,000	26	33	24	22	24	26
$10,000 - $20,000	27	29	27	27	26	27
$20,000 - $35,000	32	33	32	23	29	30
$35,000 - $50,000	23	27	25	24	27	25
More than $50,000	21	19	15	16	16	17
Marital Status						
Married	26	27	22	22	20	23
Divorced - Separated	32	36	45	32	40	38
Widowed	28	23	20	15	18	20
Never Married	29	26	26	20	28	26

Prevalence of Smoking by Major Demographics: NH BRFSS, 1987-1991

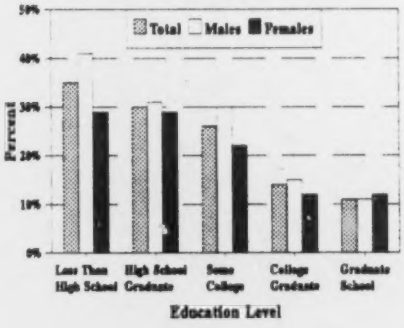
Smoking Prevalence by Year and Sex



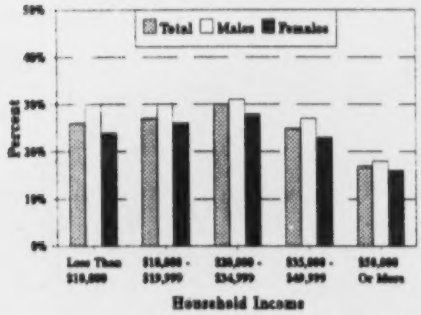
Smoking Prevalence by Age Group and Sex



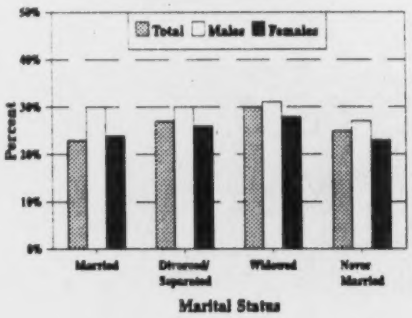
Smoking Prevalence by Education Levels and Sex



Smoking Prevalence by Household Income and Sex



Smoking Prevalence by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

Smoking Prevalence
State Average = 25%

This page deliberately

left blank.

Sedentary Lifestyle

BRFSS Definition

Sedentary = Less than 20 minutes of exercise, less than 3 times a week during the previous month.

A nationwide survey by the United States Department of Health and Human Services in 1986 found that 80-90% of U.S. adults do not get enough exercise. One half of the children in grades 5-12 spend less than 1 hour per week engaged in any kind of exercise, yet watch television 7 hours a day.[8] Over the last 50 years, the lifestyles of those in Western industrialized countries have become increasingly sedentary. For many individuals, the only significant physical activity takes place during leisure time.[9]

Failure to exercise is related to a high incidence of degenerative and organic diseases. Inactive people have twice the incidence of heart disease as active people. Duodenal ulcers and diabetes mellitus are also more common in less physically active people. An estimated 80% of all complaints of low back pain can be traced to inadequate activity. Emotional problems, inability to cope with stress, neuromuscular tension and proneness to fatigue all can accompany sedentary lifestyle.[8] Inactive senior citizens report more visits to the physician, more dependence on laxatives, and decreased vitality.[10]

Exercise increases oxygen consumption, helps control blood pressure, and increases muscle strength, endurance, flexibility, and range of motion.[10] Coronary heart disease, peripheral vascular disease, and obesity can be improved through physical activity. Weight bearing exercise has also been found to retard osteoporosis.[11] Psychological improvements are often associated with exercise. Increased energy, improved self-image, relief of tension, increased resistance to fatigue[10] and enhanced feeling of well being[11] are all attributed to increased physical activity. The American Heart Association suggests that being inactive may boost the risk of heart attack.

The United States Public Health Service has targeted exercise as one of the most important health promotion areas.[9] The Year 2000 objectives noted previously recommends an exercise routine that uses large muscle groups in dynamic movement for at least 20 minutes, 3 or more days a weeks, and which is performed at an intensity of 60% or greater of an individual's cardiorespiratory capacity.[4]

1991 Findings

Almost half (48%) of the sample reported a level of physical activity that is consistent with a sedentary lifestyle. The NH prevalence along with other state averages, is much higher than the Year 2000 goal of 15%. Those who are younger (age 18-24 = 34%), well educated (college = 39%, graduate school = 38%) and have higher incomes ($50,000 plus = 38%) are less likely to be sedentary.

Trends

Approximately half of the sample continues to be at risk in 1991 as opposed to 57% of the sample in 1987. Improvements in activity level have occurred among all age groups. Those at all levels of education, income, and marital status, and both males and females experienced fairly substantial declines from 1987 to 1991. The greatest declines occurred for females, high school graduates, college graduates and those with a family income of less than $10,000. The single exception was those with less than a high school education, which increased slightly.

Five Year Composite (1987 - 1991)

The prevalence of sedentary lifestyle increases with age going from 40% for those 18-24 to 59% for those 65 and above. Higher levels of education and income reported non-sedentary lifestyles. Those individuals who are in the highest household income bracket, and who are young and/or well educated are most likely to approach the activity goals set by the Year 2000 objectives.

Geographic Distribution (1987 - 1991)

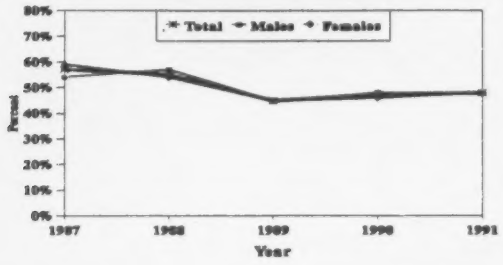
Variation across counties was small. Individuals living in the Seacoast (Strafford = 49% and Rockingham 49%) and Lakes region (Belknap = 45%) reported the lowest levels of inactivity. The highest incidence of sedentary lifestyle was reported in Coos (54%) and Carroll (56%).

Table 3. Prevalence of Sedentary Lifestyle by Major Demographics: NH BRFSS, 1987-1991

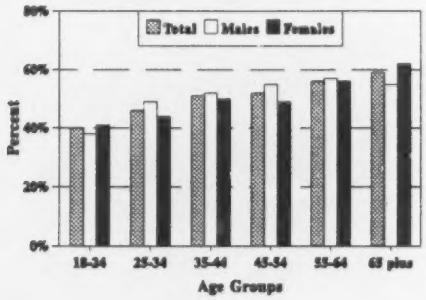
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (Weighted Data)					
Total	57	55	45	47	48	50
Age						
18 to 24	45	48	30	41	34	40
25 to 34	55	51	43	40	46	46
35 to 44	58	51	49	51	47	51
45 to 54	58	63	44	46	50	52
55 to 64	59	62	52	51	58	56
65 plus	67	65	53	56	57	59
Sex						
Male	54	57	45	48	48	50
Female	59	54	45	46	48	50
Education						
Less than H. S.	64	72	63	57	65	64
H. S. graduate	62	59	47	52	51	54
Some college	52	53	45	43	46	48
College	55	43	36	42	39	42
Graduate school	41	42	29	39	38	37
Income						
Less than $10,000	75	63	45	60	58	60
$10,000 - $20,000	60	65	50	52	53	56
$20,000 - $35,000	57	55	46	51	49	51
$35,000 - $50,000	53	49	41	42	46	46
More than $50,000	46	51	36	40	38	41
Marital Status						
Married	57	59	46	47	49	51
Divorced - Separated	50	61	52	51	46	52
Widowed	76	60	64	58	66	64
Never Married	51	42	33	40	40	41

Prevalence of Sedentary Lifestyle by Major Demographics: NH BRFSS, 1987-1991

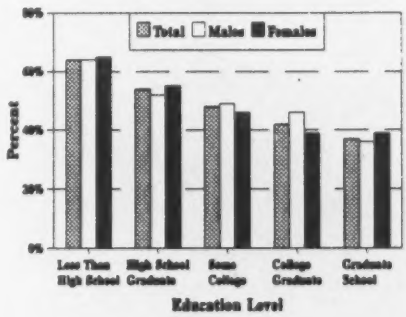
Sedentary Lifestyle Prevalence by Year and Sex



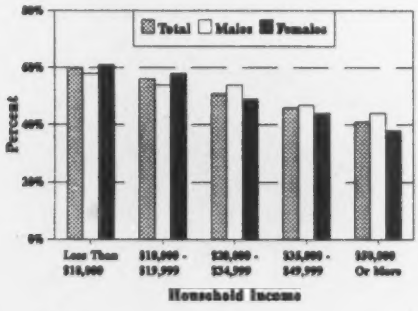
Sedentary Lifestyle Prevalence by Age Group and Sex



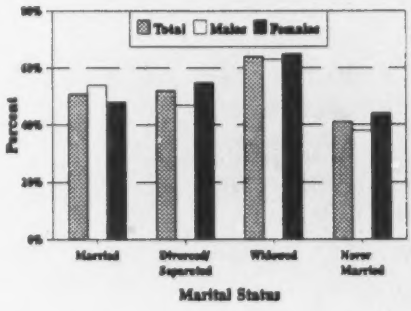
Sedentary Lifestyle Prevalence by Education Levels and Sex



Sedentary Lifestyle Prevalence by Household Income and Sex



Sedentary Lifestyle Prevalence by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

Sedentary Lifestyle Prevalence
State Average = 50%

This page deliberately

left blank.

Obesity

BRFSS definition

Obesity = greater than 20% over medium frame, midrange weight for height and gender, from 1959 Metropolitan Height-Weight Tables.

Obesity is one of the most prevalent diet-related problems in the United States, affecting approximately 34 million adults age 20-74.[12] Obesity is a medical problem as well as a social and psychological problem. It can lead directly to or aggravate many serious medical conditions such as heart disease, adult onset of diabetes, gallstones, osteoarthritis, sleep apnea and complications of pregnancy.[12] It is associated with high blood pressure, high cholesterol and many cancers including cancer of the breast, uterus, colon and prostate. Obesity has a very adverse effect on longevity and this effect becomes progressively worse as weight increases.[9]

Obesity is considered to be a secondary risk factor for heart disease because it is associated with two primary risk factors of heart disease: high fat intake and sedentary lifestyle. It is a long term predictor of coronary disease, especially in the under 50 age group.[9]

In children, as well as adults, obesity correlates with high blood pressure. It has been shown that as a person loses weight their blood pressure will drop steadily.[9]

Prevention and treatment of obesity are difficult.[12] The causes appear to be a combination of genetics, the number of fat cells an individual has, exercise habits, diet, and the psychological inability to restrain food urges. Cultural factors have also been found to affect obesity, with high appeal placed on high fat and high sugar foods and the use of many labor-saving devices in our present society.[9] The correlation of high rates of obesity in low-income women has been well established. Because the prevalence of obesity has such a great effect on physical and mental health, prevention of obesity should be a high public health priority.[12]

1991 Findings

Approximately one quarter of the respondents are at risk due to obesity. Men are somewhat more likely than women to be obese (28% compared to 23%). Age is positively correlated with the incidence of obesity while education and income are negatively correlated with obesity.

Trends

The percent of the population at risk due to obesity has increased over the five year period from 21% in 1987 to 26% in 1991. This trend is more prominent among males than females, for those with a high school diploma, and for those whose household income is less than 10,000.

Five Year Composite (1987 - 1991)

Increased incidence of obesity clusters around the middle age groups. Those age 35 to 64 are more likely to be at risk due to obesity. As education and household income increase, both men and women are less likely to be obese, but the association for women is much more prominent than for men. Women exceed men for prevalence of obesity in only three demographic categories; 65 plus, household income less than $10,000 and $10,000 - 19,999.

Geographic Distribution (1987 - 1991)

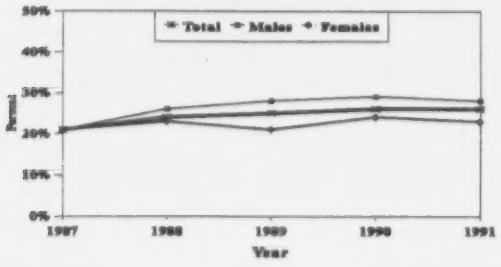
The highest rates of obesity (27%) are found in Coos and Belknap Counties with lowest rates (22%) found in Strafford and Grafton Counties.

Table 5. Prevalence of Obesity by Major Demographics: NH BRFSS 1987-1991

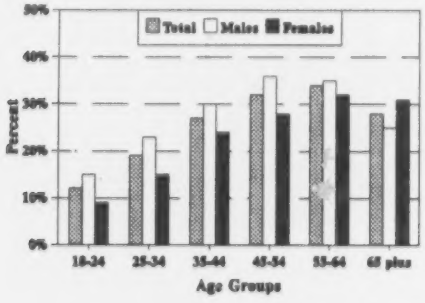
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (Weighted Data)					
Total	21	24	25	26	26	25
Age						
18 to 24	6	15	8	16	15	12
25 to 34	18	19	20	19	19	19
35 to 44	26	25	30	25	29	27
45 to 54	29	34	34	33	32	32
55 to 64	34	29	34	38	34	34
65 plus	21	29	25	34	31	28
Sex						
Male	21	26	28	29	28	27
Female	21	23	21	24	23	22
Education						
Less than H. S.	27	33	32	34	28	31
H. S. graduate	22	26	24	30	31	27
Some college	19	23	25	24	24	23
College	18	17	13	21	21	20
Graduate school	22	17	20	19	18	19
Income						
Less than $10,000	23	26	20	29	31	26
$10,000 - $20,000	26	28	26	30	27	27
$20,000 - $35,000	20	27	27	29	29	26
$35,000 - $50,000	19	23	28	26	24	24
More than $50,000	16	17	23	22	23	21
Marital Status						
Married	23	25	27	28	28	26
Divorced - Separated	25	29	24	24	21	24
Widowed	23	25	33	33	36	30
Never Married	14	19	14	19	17	17

Prevalence of Obesity by Major Demographics: NH BRFSS 1987-1991

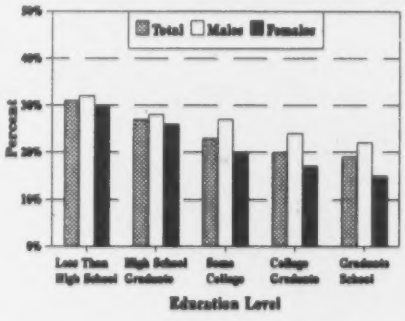
Prevalance of Obesity by Year and Sex



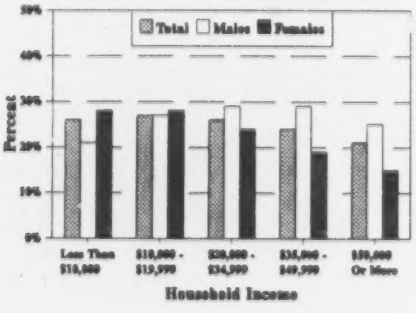
Prevalence of Obesity by Age Group and Sex



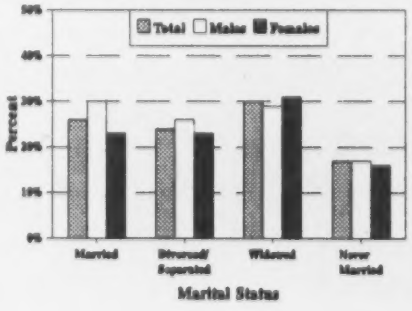
Prevalence of Obesity by Education Levels and Sex



Prevalence of Obesity by Household Income and Sex



Prevalence of Obesity by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

Obesity Prevalence
State Average = 25%

This page deliberately

left blank.

Dietary Fat

BRFSS definition

Total fat index was calculated and all persons in the sample were divided into quartiles based on the calculated amount of fat consumed. Those in the top 25% are considered to have a high dietary fat intake.

The average American adult gets about 37% of their calories from fat. Diets high in fat have been correlated with increased risk for coronary heart disease and cancers of the breast, colon, rectum, ovaries and endometrium.[13] Because fat provides more than twice the calories as equal weights of carbohydrate or protein, increased dietary fat intake may increase the risk of obesity. Decreasing fat intake can aid in losing weight and reducing health risks associated with obesity.[14] Obesity is associated with high blood pressure, high blood cholesterol, diabetes, heart disease, and stroke.

The national dietary fat availability has been monitored by the U.S. Department of Agriculture (USDA) since 1909. In the course of the 20th century Americans are eating more meat, poultry, fish, dairy products, refined sugars and sweeteners, fats, oils, and processed fruits and vegetables per-capita. Per-capita fat available has increased from 32% of total calories in 1909 to 43% in 1985.[13]

A wide variety of public health organizations recommend reduced total dietary fat and saturated fat intake as tactics in reducing the incidence of chronic illness and/or their complications. Many health organizations specify that total fat consumption should not exceed 30% of total calories. Among the public health messengers promoting reduced fat intake are The Surgeon General's Report on Nutrition and Health,[12] the National Research Council, the American Cancer Society, the National Cancer Institute, the American Heart Association, the American Diabetes Association, the U.S. Department of Agriculture, the U.S. Department of Health and Human Services, and the U.S. Department of Health, Education, and Welfare.[13]

The dietary fat section of the BRFSS questionnaire includes questions related to the frequency of ingestion of foods that have been identified as the top contributors to dietary fat intake. Standard portion sizes and fat content for each item have been calculated by the U.S. Department of Agriculture and divided into quarters. Further, high fat intake is judged on the basis of average fat intake for the state rather than a single standard related to nutritional needs, health, and longevity. Therefore, it is possible that the fat intake for the majority of the sample could exceed a "healthy" fat intake, and yet only the top quartile be identified as having a "high fat" diet.

1991 Findings

Twenty-seven percent of NH residents reported high dietary fat intake. Forty percent of men consume high fat diets compared with 16% of women. Those who are less educated report higher fat intake; less than high school 36% and high school graduates 32%. Also, those with high and low household incomes report less high fat intake than their counterparts in the middle income levels. Younger age groups also report higher fat intake.

Trends

Data have only been collected since 1990. A description of trends will be presented in a future report.

Two Year Composite Data (1990 - 1991)

Demographics groups that reported the highest fat intake included persons 18-34 and those with a high school education or less. Men reporting high fat intake far exceeded women (37% to 18%). Those with midrange incomes ($20-35K) reported the highest fat intake for this variable at 33% with fat intake progressively decreasing toward the extremes at either end. Men of all age groups, education levels, incomes, and marital status reported higher fat intakes than women, the differences being most pronounced among 18-34 year olds, and those with lower income and education.

Geographic Distribution (1990 - 1991)

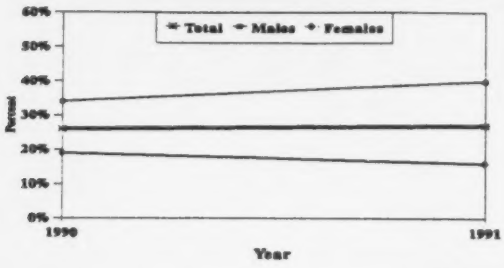
The highest dietary fat intake was reported in Coos County (38%) and lowest reports occurred among residents of Belknap (24%) and Strafford (23%) Counties.

Table 6 Prevalence of High Dietary Fat Intake by Major Demographics: NH BRFSS, 1990-1991

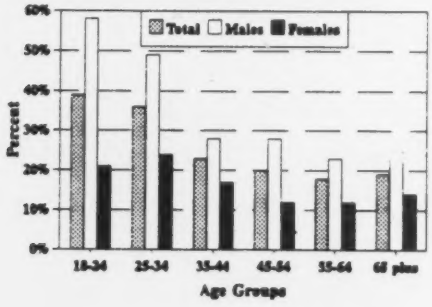
	1990	1991	Two year composite
	Percent of Sample (weighted data)		
Total	26	27	27
Age			
18 to 24	38	40	39
25 to 34	31	41	36
35 to 44	21	24	23
45 to 54	22	17	20
55 to 64	22	13	18
65 plus	22	14	19
Sex			
Male	34	40	37
Female	19	16	18
Education			
Less than H. S.	37	36	36
H. S. graduate	32	32	32
Some college	22	29	25
College	21	19	20
Graduate school	17	14	16
Income			
Less than $10,000	24	25	25
$10,000 - $20,000	28	31	29
$20,000 - $35,000	31	35	33
$35,000 - $50,000	27	26	26
More than $50,000	22	20	21
Marital Status			
Married	25	24	25
Divorced - Separated	32	30	31
Widowed	16	10	13
Never Married	32	40	36

Prevalence of High Dietary Fat Intake by Major Demographics: NH BRFSS, 1990-1991

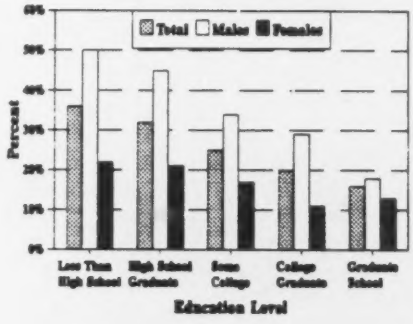
Prevalence of High Dietary Fat Intake by Year and Sex



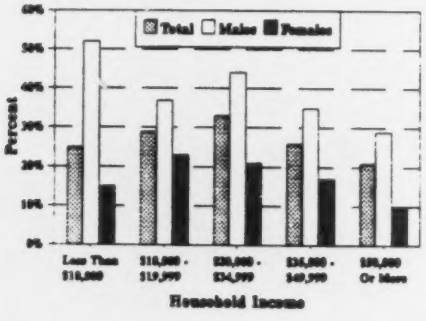
Prevalence of High Dietary Fat Intake by Age Group and Sex



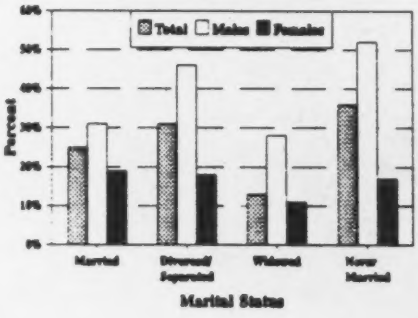
Prevalence of High Dietary Fat Intake by Education Levels and Sex



Prevalence of High Dietary Fat Intake by Household Income and Sex



Prevalence of High Dietary Fat Intake by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1990-1991 Data

High Dietary Fat Intake Prevalence
State Average = 27%

This page deliberately

left blank.

Hypertension

BRFSS definition

An individual was considered hypertensive if they had been told that their blood pressure was high more than once or if they reported taking medications to decrease their blood pressure.

Hypertension (high blood pressure) is a condition in which blood pressure increases and stays high.[15] A person is considered to have hypertension if blood pressure is equal to or greater than 140 mm Hg systolic and/or 90 mm Hg diastolic during more than one blood pressure measurement.[4] About one in four Americans has high blood pressure and more than one half of these have high blood pressure that is very serious.[15] Hypertension often does not have symptoms and approximately 54% to 66% of those with high blood pressure do not realize that they have this condition.[4] If untreated, hypertension can increase the risk of a heart attack, stroke or kidney disease.[16] In New Hampshire, heart disease and stroke were among the 3 leading causes of death in 1989, accounting for 40% of all deaths.[6]

Hypertension cannot be cured; however, it can be controlled by reduction in weight, sodium intake, and alcohol intake, and through prescription medication.[15] Regular exercise, biofeedback and relaxation techniques may also be helpful in achieving blood pressure control.[4] Hypertension sometimes can be controlled with diet alone, especially in an overweight individual. In general, in overweight hypertensives, losing weight lowers blood pressure. Cutting down on dietary salt intake may also help control blood pressure. This includes not only table salt but also such foods as snack foods, processed foods, canned soups and vegetables, pickles, processed meats, cheese and even some medications such as antacids which may all have a high sodium content.[15]

Men are less likely than women to seek and follow health care recommendations, with young hypertensive men the least likely group to take steps to control their blood pressure. As many as 50% of people with hypertension drop out of treatment within the first year and only two thirds who stay in care take enough prescribed medication to achieve adequate blood pressure reduction.[4]

1991 Findings

A fifth of the respondents to the 1991 New Hampshire BRFSS have been told their blood pressure is high more than once or reported being on medication to decrease their blood pressure. Of these, two thirds have been told their blood pressure is high more than once, and over half (57%) are taking medicine to control their blood pressure. The prevalence of hypertension increased with age and decreased with education and income. Forty-four percent of those age 65 plus reported high blood pressure compared with 34% for those age 55-64 and 22% for those age 45-54. Twenty-seven percent and 38% respectively of those individuals at the lowest level of education and income reported high blood pressure compared with only 12% and 16% of those at the highest levels.

Trends

Hypertension has decreased slightly from 1987 to 1991 (22% to 20%). The prevalence of hypertension within demographic groups has remained relatively stable. However, there does appear to be a noticeable decrease among those with less than a high school education, those with college and graduate school education and those age 45-54.

Five Year Composite (1987 - 1991)

The incidence of hypertension in New Hampshire increases steadily with age from less than 10% in the 18 to 24 year old range to 44% in the 65 plus range. For females aged 65 and over, nearly half (46%) were defined as hypertensive; 40% of the males in this age category were hypertensive. Those with less income and less education report hypertension more frequently. The Year 2000 national goal for the percent at risk for hypertension is 10%. Over the past five years, the percent of New Hampshire residents at risk has remained around 20%.

Geographic Distribution 91987 - 1991)

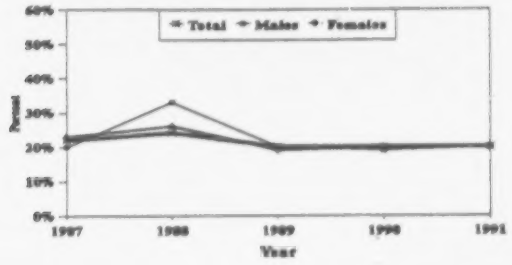
The highest hypertension prevalence was reported in Carroll County (29%) and the lowest reports occurred among residents of Strafford and Rockingham Counties (19%).

Table 7. Prevalence of Hypertension by Major Demographics: NH BRFSS, 1987-1991

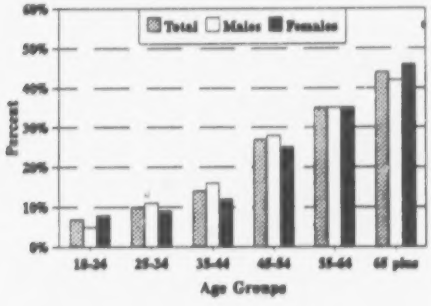
	1987	1988	1989	1990	1991	Five year composite
	Percent of sample (weighted data)					
Total	22	24	20	20	20	21
Age						
18 to 24	5	10	9	5	5	7
25 to 34	12	13	10	7	9	10
35 to 44	16	15	12	13	15	14
45 to 54	30	32	24	26	22	27
55 to 64	31	42	35	35	34	35
65 plus	47	45	43	45	44	44
Sex						
Male	20	23	20	19	20	20
Female	23	26	19	20	20	21
Education						
Less than H. S.	38	28	26	27	27	29
H. S. graduate	19	27	22	23	24	23
Some college	15	18	18	15	16	16
College	22	22	12	15	16	17
Graduate school	27	28	24	17	12	21
Income						
Less than $10,000	40	34	30	39	38	36
$10,000 - $20,000	21	31	22	25	25	25
$20,000 - $35,000	20	25	19	19	19	20
$35,000 - $50,000	19	20	17	17	16	18
More than $50,000	19	18	17	15	16	16
Marital Status						
Married	23	26	21	20	21	22
Divorced - Separated	25	26	22	20	19	22
Widowed	40	38	44	50	47	44
Never Married	11	15	10	9	7	10

Prevalence of Hypertension by Major Demographics: NHBRFSS, 1987-1991

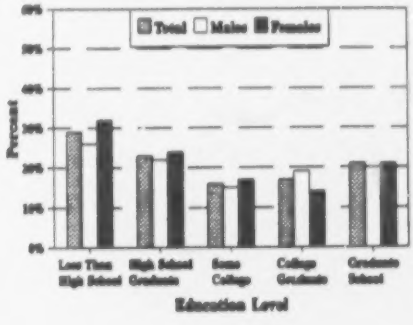
Hypertension Prevalence by Year and Sex



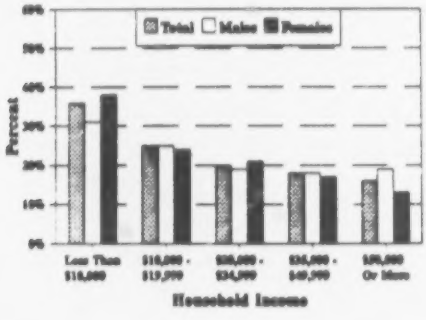
Hypertension Prevalence by Age Group and Sex



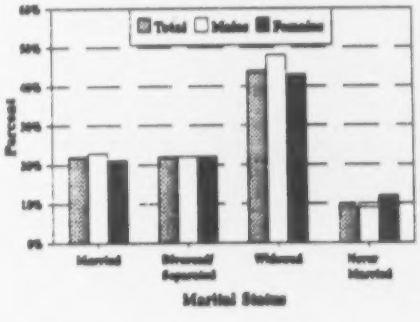
Hypertension Prevalence by Education Levels and Sex



Hypertension Prevalence by Household Income and Sex



Hypertension Prevalence by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

Hypertension Prevalence
State Average = 21%

This page deliberately

left blank.

Alcohol Consumption

BRFSS definition

Acute drinking - People who have 5 or more drinks on one occasion

Chronic drinking - People who have 60 or more drinks per month.

Drinking/Driving - People who drive after having too much to drink. Response to this question is based on the *respondent's perception* that "perhaps you have had too much to drink".

Alcohol consumption has been implicated in a wide range of social, psychological and physical problems. Low levels of alcohol impair judgment, decrease inhibition, cause drowsiness and slow reaction time. Nausea, vomiting, headache, tremor, gastritis and extreme thirst often occur following excessive intake. Long term effects of chronic drinking include peripheral neuropathy, liver damage, nutritional deficiencies, cardiomyopathy, muscle wasting and weakness, alcohol gastritis, esophageal varices and hemorrhage, impotence, sterility and ineffective blood cell production.[17]

It is estimated that 1 in 10 people who drink becomes alcohol dependent.[17] End stage alcoholism is responsible for most illness and death from cirrhosis, the third leading cause of death among men 35-54.[18] Chronic alcohol consumption increases the risk of digestive tract, head and neck cancers. More than 7 drinks a week doubles the risk of mouth and throat cancers.[19] Combining alcohol and tobacco use is associated with particularly increased risk. Drinking one and a half ounces of alcohol and smoking 2 packs of cigarettes a day increases the risk of mouth and throat cancers 15 times.[20]

Ingestion of alcohol during pregnancy can have serious consequences for the developing fetus. Fetal alcohol syndrome is estimated to affect 1 in 750 newborns and results in multi-system deformities, growth retardation and mental retardation.[21] Even small amounts of alcohol ingested regularly throughout pregnancy can result in significant growth and developmental defects.[21]

Alcohol related problems are implicated in divorce, family strife, unemployment and poverty. An estimated 27 million children are at risk for social, psychological and developmental abnormalities from alcohol abuse.[22] Decreased inhibition and poor judgment associated with alcohol ingestion contributes to homicide, suicide and auto accidents. Half of all motor vehicle deaths occur as a result of alcohol related accidents.[23]

Nationally the expenditure for state supported alcohol and drug abuse services steadily increased during the years 1985 to 1989. In New Hampshire there was an 89.9% increase over these years. In 1989, 5,057 individuals were admitted to programs receiving funds from the New Hampshire State Alcohol Agency. Of these individuals, a majority were in the 25-44 age group, with 2,140 in the 25-34 age group and 1,107 in the 35-44 age group. In each category there were approximately three times as many males as females. Forty two percent of the admissions reported secondary drug problems.[24]

1991 Findings

Twenty percent of the individuals interviewed in 1991 reported acute drinking. Six percent were labeled chronic drinkers and 3% reported drinking and driving. A third reported totally abstaining from alcohol. Males were more likely to be at risk for all types of problem drinking than females. Male/female prevalence rates for acute drinking were 30% vs 11%; for chronic drinking 10% vs 1% and for drinking and driving 5% vs 2%. Younger individuals were also more likely to be at risk. Acute drinking rates decreased steadily with age from a high of 42% (age 18-24) to 5% and less for those 55 and older. Chronic drinking is highest in the younger age categories at 9% and 8% respectively declining to approximately 5% for the remaining age groups except for those 65 plus which reported only 1% chronic drinking. A notable drop from 6% to 3% for drinking and driving occurs between age categories 25-34 and 35-44.

Trends

The prevalence of acute drinking has remained remarkably stable between 1987-1991. No clear trends can be identified among any of the major demographics. Chronic drinking seems to be decreasing over the five year period with the trend being most pronounced among men and those with more education and higher incomes. Reported drinking and driving has decreased slightly from 5% to 3%.

Five Year Composite (1987 - 1991)

Overall, 18% of the sample reported one or more instances of acute drinking in the month prior to the interview. Acute drinking decreases with age from 37% in the 18 to 24 age category to 3% in those over 65. Males reported acute drinking three times as often as females and for those in the youngest age group 51% of the males were at risk compared with 23% of the females in this age group. Men continue to exceed women in reports of chronic drinking 13% vs 2%. This generally remains true when viewed against all major demographic variables. Chronic drinking substantially decreases with age but increases somewhat with increasing income. The prevalence of drinking and driving decreases with age and is more likely among males than females (6% vs 1%). The percent at risk for drinking and driving was approximately 10% for males (age 18-34) and slightly less than 3% for females (age 18-34).

Geographic Distribution (1987 - 1991)

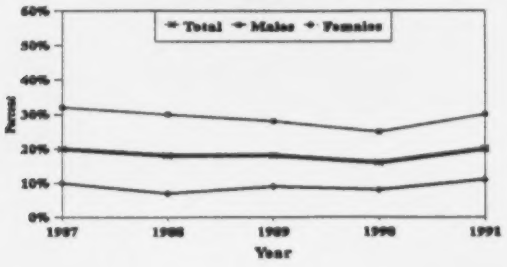
Acute drinking is more prevalent in the southern tier and seacoast region and generally lower in Grafton, Sullivan and Belknap Counties. Chronic drinking is most frequently reported in Coos County and least often reported in Sullivan County. Drinking and driving ranges from 2% to 5% across the state with Belknap county reporting the lowest and Strafford the highest.

Table 8. Prevalence of Acute Drinking by Major Demographics: NH BRFSS, 1987-1991.

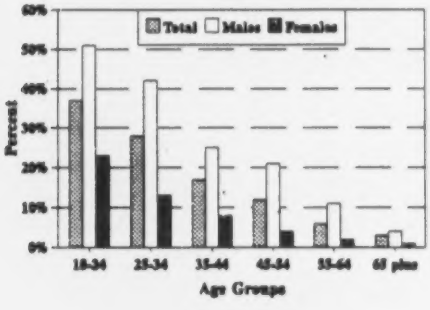
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (weighted data)					
Total	20	18	18	16	20	18
Age						
18 to 24	41	37	38	25	42	37
25 to 34	30	25	28	25	30	28
35 to 44	15	15	16	16	21	17
45 to 54	13	12	11	13	12	12
55 to 64	8	9	3	6	5	6
65 plus	4	1	2	3	2	3
Sex						
Male	32	30	28	25	30	29
Female	10	7	9	8	11	9
Education						
Less than H. S.	10	15	14	11	23	15
H. S. graduate	25	20	19	16	19	20
Some college	23	19	19	17	25	20
College	18	20	19	19	19	19
Graduate school	17	9	16	13	13	13
Income						
Less than $10,000	14	8	19	9	13	13
$10,000 - $20,000	23	17	13	13	16	17
$20,000 - $35,000	19	18	19	18	21	19
$35,000 - $50,000	26	25	23	19	30	24
More than $50,000	21	20	19	18	22	20
Marital Status						
Married	16	13	12	14	15	14
Divorced - Separated	21	25	22	18	19	21
Widowed	3	1	3	4	2	13
Never Married	40	34	37	26	41	36

Prevalence of Acute Drinking Prevalence by Major Demographics: NH BRFSS, 1987-1991

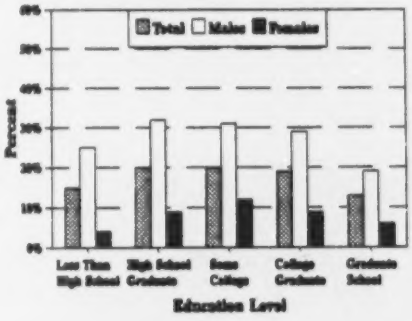
Acute Drinking Prevalence by Year and Sex



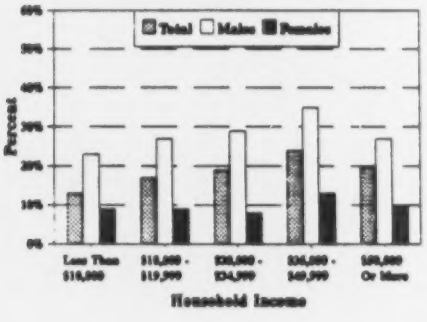
Acute Drinking Prevalence by Age Group and Sex



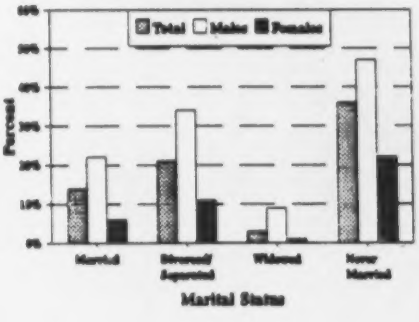
Acute Drinking Prevalence by Education Levels and Sex



Acute Drinking Prevalence by Household Income and Sex



Acute Drinking Prevalence by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

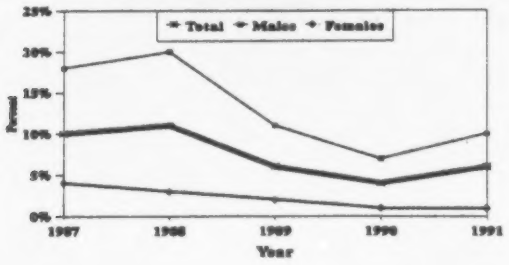
Acute Drinking Prevalence
State Average = 18%

Table 9. Prevalence of Chronic Drinking by Major Demographics: NH BRFSS, 1987-1991.

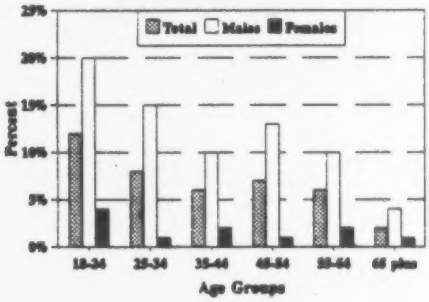
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (weighted data)					
Total	10	11	6	4	6	7
Age						
18 to 24	15	19	10	5	9	12
25 to 34	10	11	8	5	8	8
35 to 44	11	8	6	3	5	6
45 to 54	13	11	4	5	4	7
55 to 64	6	9	5	2	5	6
65 plus	4	4	2	2	1	2
Sex						
Male	18	20	11	7	10	13
Female	4	3	2	1	1	2
Education						
Less than H. S.	9	8	4	4	8	6
H. S. graduate	9	12	8	5	5	8
Some college	11	12	5	2	8	7
College	12	9	5	5	3	6
Graduate school	12	9	5	2	2	6
Income						
Less than $10,000	6	4	9	0	3	5
$10,000 - $20,000	9	10	6	7	5	7
$20,000 - $35,000	10	13	9	5	7	9
$35,000 - $50,000	12	10	9	3	5	8
More than $50,000	15	15	2	3	8	7
Marital Status						
Married	9	8	5	3	4	6
Divorced - Separated	13	16	10	4	7	10
Widowed	1	2	2	2	2	2
Never Married	15	19	10	7	11	12

Prevalence of Chronic Drinking by Major Demographics: NH BRFSS, 1987-1991

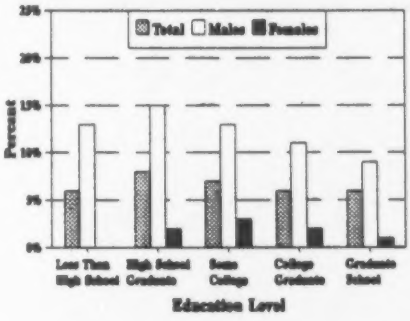
Chronic Drinking Prevalence by Year and Sex



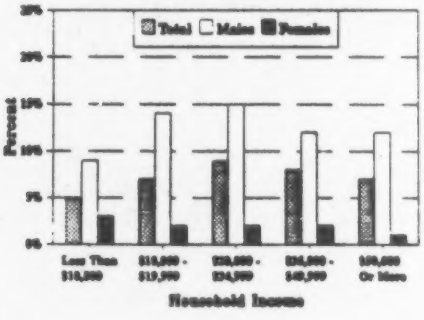
Chronic Drinking Prevalence by Age Group and Sex



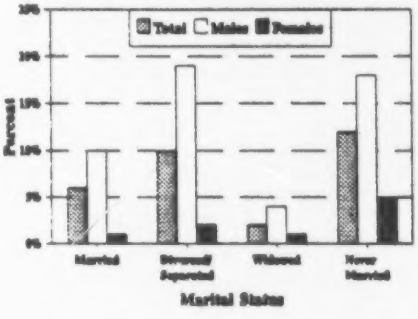
Chronic Drinking Prevalence by Education Levels and Sex



Chronic Drinking Prevalence by Household Income and Sex



Chronic Drinking Prevalence by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

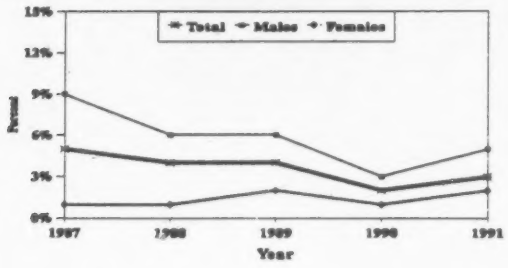
Chronic Drinking Prevalence
State Average = 7%

Table10. Prevalence of Drinking and Driving by Major Demographics: NH BRFSS, 1987-1991.

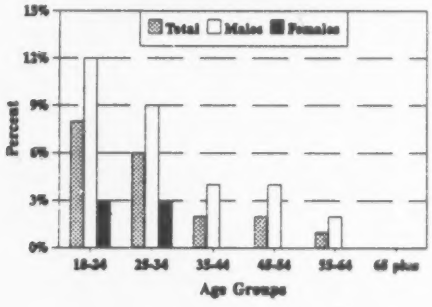
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (weighted data)					
Total	5	4	4	2	3	3
Age						
18 to 24	11	8	11	1	6	8
25 to 34	8	6	4	5	6	6
35 to 44	3	2	2	2	3	2
45 to 54	3	2	3	2	1	2
55 to 64	0	0	2	1	0	1
65 plus	0	0	0	0	1	0
Sex						
Male	9	6	6	3	5	6
Female	1	1	2	1	2	1
Education						
Less than H. S.	2	1	0	1	3	1
H. S. graduate	6	5	4	2	2	4
Some college	6	5	4	3	5	5
College	5	2	5	1	5	3
Graduate school	3	3	3	2	0	2
Income						
Less than $10,000	2	3	7	2	0	3
$10,000 - $20,000	5	6	4	1	3	4
$20,000 - $35,000	6	4	3	3	5	4
$35,000 - $50,000	6	3	5	2	6	4
More than $50,000	6	3	2	2	1	3
Marital Status						
Married	3	2	2	2	2	2
Divorced - Separated	5	6	4	5	1	4
Widowed	1	0	0	0	2	1
Never Married	10	9	9	3	9	8

Drinking and Driving Prevalence by Major Demographics: NH BRFSS, 1987-1991

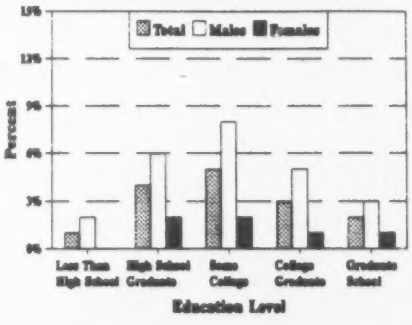
Drinking and Driving Prevalence by Year and Sex



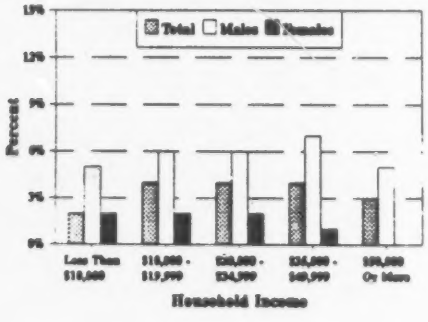
Drinking and Driving Prevalence by Age Group and Sex



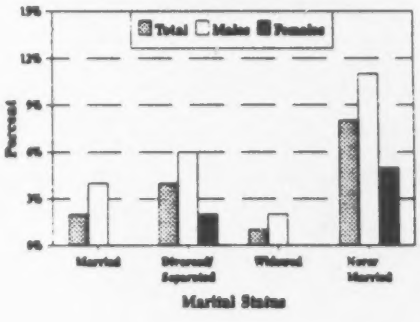
Drinking and Driving Prevalence by Education Levels and Sex



Drinking and Driving Prevalence by Household Income and Sex



Drinking and Driving Prevalence by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

Drinking and Driving Prelavence
State Average = 3%

This page deliberately

left blank.

Seatbelt Non-use

BRFSS definition

Respondents who report they "sometimes", "seldom" or "never" use seatbelts when they drive or ride in a car.

There has been a steady decline in fatalities due to motor vehicle collisions in New Hampshire in the last 3 years, with 144 fatalities in 1991 compared to 190 in 1989. A combination of factors have contributed to these reductions, probably including increased seatbelt use. The New Hampshire Highway Safety Agency has estimated that $100 million in lost productivity was incurred as a result of motor vehicle collisions in 1990.[25]

Motor vehicle accidents are the leading cause of injury deaths[26] with 46,056 motor vehicle related deaths in the United States in 1986. Motor vehicle collisions were also responsible for 1.8 million non-fatal disabling traffic injuries in 1987. Seatbelts have been found to reduce fatalities by 40% to 50% and serious injury by 45% to 55%. One study found that seatbelt use reduced hospital admissions from crashes by 65% and hospital charges by 67%.[27]

A combination of legislation, enforcement, education, behavior change and engineering technology are needed to make safety changes. States that have enacted laws mandating seatbelt use have increased belt use from a low range of 10% to 20% to a high range of 40% to 60% with accompanying reductions in deaths of 5% to 15%.[26] A recent analysis of 24 states and the District of Columbia with mandatory seatbelt laws found a 7% drop in fatalities. Another analysis of 5 states with mandatory seatbelt laws found a 10% decrease in non-fatal injuries.[27] The official estimate of fatality reduction with seatbelt use is 40% to 50% if lap-shoulder belts are fully used and 35% to 50% if automatic belts are fully used. Presently 33 states have enacted laws mandating the use of seatbelts. New Hampshire is among the 17 states that are yet to pass the legislation. Current law in New Hampshire requires the use of seatbelts only for those under 12 years of age.

1991 Findings

Forty-one percent of NH respondents reported they sometimes, seldon or never use seatbelts. Males were more likely to place themselves at risk then females (46% vs. 36%). Education and income are important factors in regular seatbelt useage. Sixty-three percent of those with less than a high school education reported seatbelt non-use; this drops to only 13% for those who attended graduate school. Similar findings occur for household income levels; those with income levels at $35,000 and above are much more likely to use their seatbelt than those with lower income levels.

Trends

Over the past five years, the percent of New Hampshire residents at risk for non-seatbelt usage has declined from a high of 53% in 1987 to a low of 40% in 1990 and reached 41% in 1991. Although this general trend is encouraging, NH is well above the median for all states reporting BRFSS data (26%) and the percentages are still nearly three times the Year 2000 Objectives of 15% nonuse. Thirty-five states report higher seatbelt useage rates than NH residents whereas only 9 states fall below NH rates.

Five Year Composite (1987 - 1991)

Younger and older respondents reported seatbelt non-use above the 47% state average; 52% for those age 18-24 and 52% and higher for those 55 and over. Males (51%), those with less than a high school education (68%) and those at the lowest household income level (62%) were more likely to place themselves at risk by not using a seatelt.

Geographic Distribution (1987 - 1991)

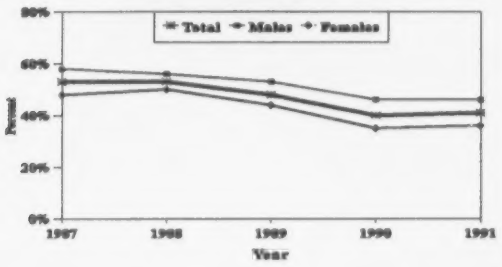
Coos residents, at 64% non-use were by far the least likely to buckle up. Carroll county (41%) and Belknap county (42%) residents reported the lowest non-use rates.

Table 11. Prevalence of Seatbelt Non-use by Major Demographics: NHBRFSS 1987-1991

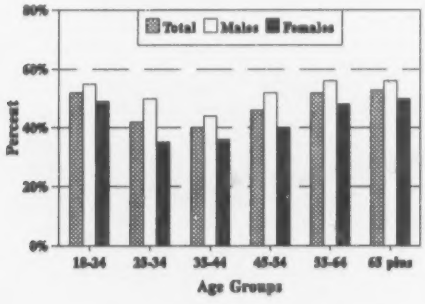
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (Weighted data)					
Total	53	53	48	40	41	47
Age						
18 to 24	56	64	54	40	43	52
25 to 34	50	42	45	36	40	42
35 to 44	49	50	37	36	36	40
45 to 54	48	55	50	38	40	46
55 to 64	50	58	56	53	42	52
65 plus	64	53	57	46	47	53
Sex						
Male	58	56	53	46	46	51
Female	48	50	44	36	36	42
Education						
Less than H. S.	76	77	71	55	63	68
H. S. graduate	63	64	57	54	52	58
Some college	48	46	48	37	38	43
College	31	32	31	23	25	28
Graduate school	40	19	18	19	13	21
Income						
Less than $10,000	74	71	64	50	51	62
$10,000 - $20,000	60	58	59	55	57	58
$20,000 - $35,000	55	54	55	45	46	51
$35,000 - $50,000	48	42	44	36	32	40
More than $50,000	35	40	27	30	28	31
Marital Status						
Married	51	49	46	39	38	44
Divorced - Separated	57	65	50	50	48	53
Widowed	65	48	60	42	49	52
Never Married	54	59	51	37	44	49

Prevalence of Seatbelt Non-use by Major Demographics: NH BRFSS 1987-1991

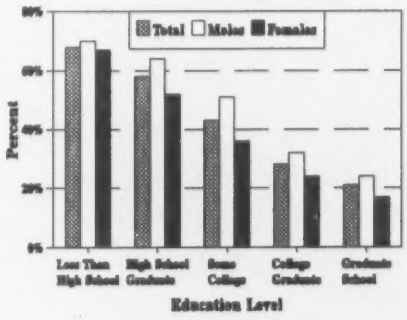
Seatbelt Non-Use Prevalence by Year and Sex



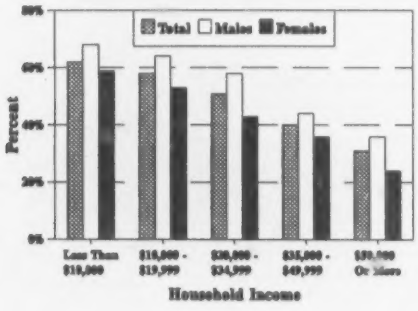
Seatbelt Non-Use Prevalence by Age Group and Sex



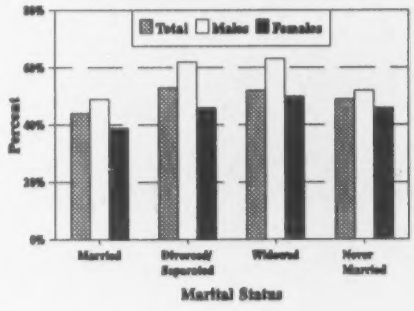
Seatbelt Non-Use Prevalence by Education Levels and Sex



Seatbelt Non-Use Prevalence by Household Income and Sex



Seatbelt Non-Use Prevalence by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

Seatbelt Non-Use Prevalence
State Average = 47%

This page deliberately

left blank.

Preventive Health Practices

Cervical Cancer Screening

BRFSS definition

At risk = Women who report not having a Pap smear test in the past two years.

In New Hampshire 196 cases of cervical cancer were diagnosed between 1987-1989, and 103 deaths occurred during the period 1985-1989.[29] For 1980-1987, New Hampshire's death rate was 4.3/100,000 compared to the United States rate for white females of 3.2/100,000.[30] The earlier the stage of disease at detection the better the survival rate. The 5 year survival rates for cervical cancer are excellent if detected in early stages but decline markedly for late-stage diagnosis: virtually 100 percent for carcinoma in situ; 90 percent when diagnosed in the local stage; 70-80 percent when diagnosed in the regional stage; and 40 percent in the distant stage.[31] Inadequate or no screening using the Papanicolaou (Pap) test accounts for approximately two-thirds of all deaths from cervical cancer.[32]

Risk factors for cervical cancer primarily involve sexual contact.[33] They include sexual intercourse at an early age, multiple sex partners, and infection with sexually transmitted diseases, especially certain types of the Human Papilloma Virus. Other risk factors are smoking and low socioeconomic status. CDC estimates that 29% of cervical cancer mortality is attributable to cigarette smoking.[34] The American Cancer Society recommends annual Pap and pelvic exams for women who are sexually active or have reached age 18. After 3 or more consecutive annual normal exams, the Pap test may be performed less frequently at the physician's discretion.[35]

1991 Finding

Twenty percent of the respondents reported they had not had a Pap smear in the past two years. Those reporting highest rates included older women age 65 plus (47%), those with the lowest education level (45%), and the lowest household income (45%).

Trends

The percentage of women who had not received a Pap smear during the past two years increased between 1988 and 1991 with 16% reported in 1988 and 20% reported in 1991. Several groups exhibited much higher increases over the four years. Those age 65 and over increased from 34% to 47%; those with less than a high school diploma increased from 23% to 45%; and those with household incomes less than $10,000 increased form 28% to 45%. Certain demographic groups were contrary to this trend reporting improved rates for Pap smear examinations; those aged 35-54, those with a college education, and those with household incomes of $10,000-$20,000 all reported increased screening in the past two years.

Four Year Composite (1988 - 1991)

Women aged 65 and over (39%) reported noncompliance rates far in excess of the four year average of 18%. A rate of 31% was reported by women without a high school education and 36% for women with a household income of less than $10,000, both groups notably above the average.

Geographic Distribution (1998 - 1991)

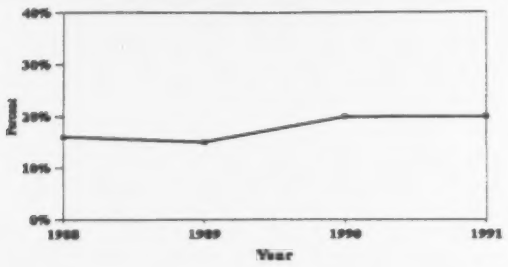
The greatest noncompliance for Pap smear examinations was found in Belknap county with 26% of the women lacking screening during the two year period. Grafton and Strafford counties had the lowest noncompliance rates at 15%.

Table 12. Women who have not had a Pap smear in the Past Two Years by Major Demographics: NH BRFSS, 1988-1991.

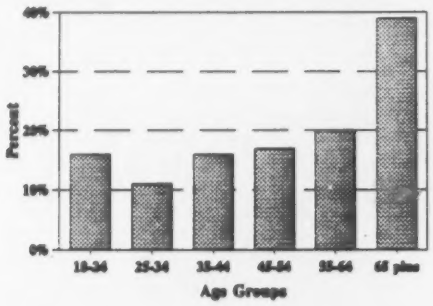
	1988	1989	1990	1991	Four year composite
	Percent of Sample (Weighted data)				
Total	16	15	20	20	18
Age					
18 to 24	15	10	18	21	16
25 to 34	6	12	12	11	11
35 to 44	20	14	15	15	16
45 to 54	17	18	22	13	17
55 to 64	18	16	22	25	20
65 plus	34	28	44	47	39
Education					
Less than H. S.	23	20	34	45	31
H. S. graduate	18	17	20	22	19
Some college	15	16	20	15	17
College	15	10	17	14	14
Graduate school	7	9	14	8	10
Income					
Less than $10,000	28	24	41	45	36
$10,000 - $20,000	21	22	27	19	22
$20,000 - $35,000	17	11	17	19	16
$35,000 - $50,000	14	15	19	12	15
More than $50,000	8	14	10	11	11
Marital Status					
Married	13	13	16	15	14
Divorced - Separated	23	19	23	17	20
Widowed	24	30	40	48	37
Never Married	24	16	26	26	23

Women who have not had a Pap smear in the Past Two Years by Major Demographics: NH BRFSS, 1988-1991.

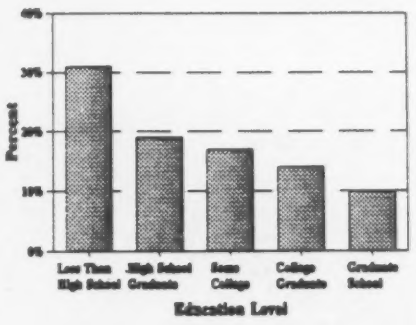
Women Who Have Not Had A Pap Smear in the Past Two Years



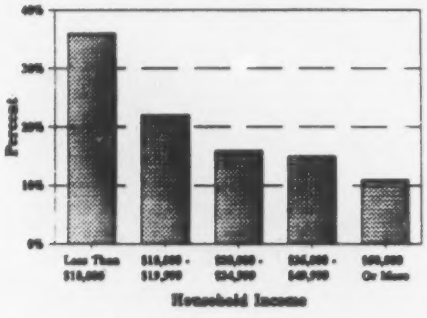
Women Who Have Not Had a Pap Smear in the Past Two Years by Age Group



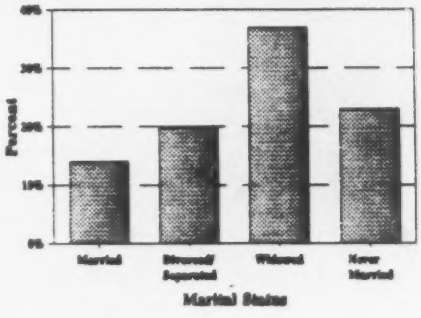
Women Who Have Not Had a Pap Smear in the Past two Years by Education Levels



Women Who Have Not Had a Pap Smear in the Past Two Years by Household Income

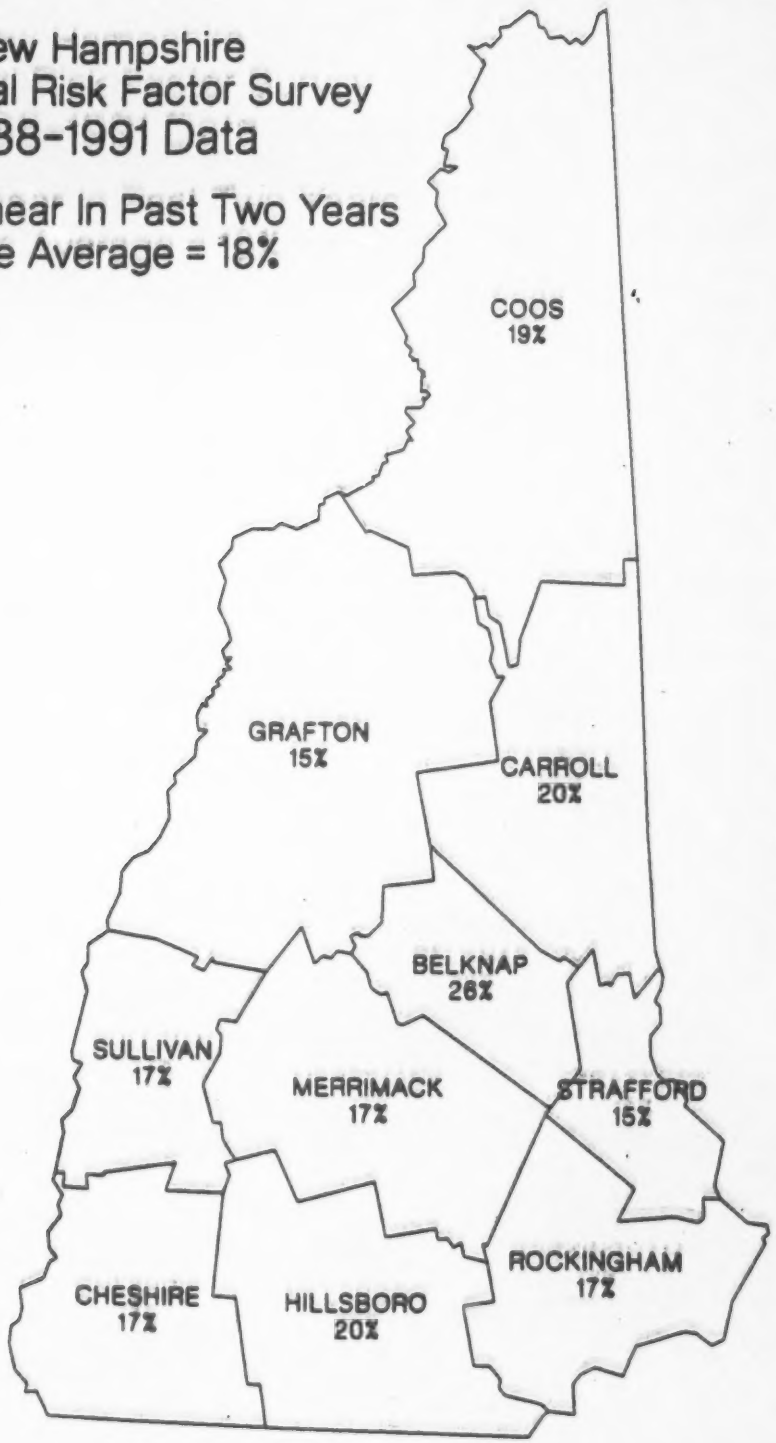


Women Who Have Not Had A Pap Smear in the Past Two Years by Marital Status



New Hampshire
Behavioral Risk Factor Survey
1988-1991 Data

No Pap Smear In Past Two Years
State Average = 18%



This page deliberately

left blank.

Breast Cancer Screening

BRFSS definition

At risk = Women aged 40-49 who have not had a Mammogram in the past two years.

At risk = Women aged 50 and older who have not had Mammogram in the past year.

Breast cancer was the leading cancer for women, with 2,069 cases (106.5/100,000) diagnosed between the years 1987 - 1989. 967 deaths (29/100,000) occurred during the period 1985-1989.[29] This is higher than the national white mortality rate of 27.3/100,000 and places New Hampshire seventh for all states and the District of Columbia.[32,36] The earlier the stage of disease at detection, the better the chances of survival. National data show that if breast cancer is diagnosed at the local stage the 5 year survival rate is 92%. If diagnosed at the regional stage the 5 year survival rate declines to 72%, and at the distant stage to 19%.[32]

The cause of breast cancer is unknown, although there are many factors associated with increased incidence. These include age, with incidence increasing as women grow older. Cancer of one breast places patients at greater risk for developing cancer of the other breast. Also, a family history is an important risk factor as is exposure to ionizing radiation, especially if the exposure occurs before age 35. Women who have had cancer of the colon, thyroid, endometrium or ovary also have a higher incidence of breast cancer.[37]

The best method currently known for controlling breast cancer is early detection and routine screening of asymptomatic women. The three accepted screening methods are breast self exam, clinical breast exam and mammography. The American Cancer Society recommends a physical breast exam every 3 years for women between ages 20-40 and yearly thereafter, and a baseline mammogram between ages 35-39, every 1-2 years between ages 40-49 and yearly for women age 50 and over.[38] However, mammography has been shown to decrease mortality only when given to women 50 and over.

1991 Findings

Twenty-three percent of women aged 40-49 reported having no mammogram in the past two years and 45% aged 50 and over reported no mammogram in the past year. For those women in the first category, those age 45-49 were more likely to be in compliance with recommended guidelines relative to their younger counterparts (17% vs 26% noncompliance). However, for women age 50 and over a decrease in compliance is reported with increasing age. Twenty-six percent of the women between age 50-54 were not in compliance with guidelines compared with 51% for those age 65 and over.

Compliance for women in both age groups was directly related to income and educational levels. For those age 40-49 with less than a high school education 43% were not in compliance compared with only 16% for those who attended graduate school. Thirty-eight percent of women living in households reporting less than $10,000 did not comply vs 10% for those with incomes levels exceeding $50,000. Among women age 50 and over who attended graduate school only 20% had not had a mammogram in the past year whereas 54% were not in compliance for those women with less than a high school education. The greatest descrepancy occurred for women age 50 and over reporting high and low household incomes. Sixty-one percent of those with less than $10,000 reported noncompliance vs only 15% for those at $50,000 and above.

Trends

Rates for noncompliance from 1987 -1991 have steadily declined for both age groups with the largest shifts occurring among those age 40-49 (60% to 23%).

Five Year Composite (1987 - 1991)

Those age 40-44 have 41% reporting noncompliance. This drops to 32% for those age 45-49 and then steadily raises across age groups, peaking at 56% for those age 65 and over. Both age groups suggest a definite relationship between low education and income and low rates of compliance relative to those with higher education and income.

Geographic Distribution (1987 - 1991)

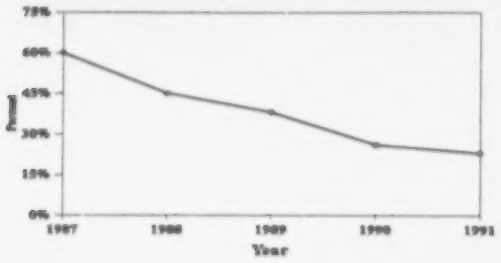
Cheshire (50%) and Belknap counties (49%) have the highest noncompliance rates for women age 40-49. Coos and Merrimack counties report the lowest rates at 28%. For women age 50 and over who report no mammogram in the past year, Strafford county posted the highest rates at 58% with Cheshire and Belknap also again reporting high rates (54%). Thirty-seven percent was the lowest rate reported by Sullivan county.

Table 13. Women aged 40-49 who have not had a Mammogram in the Past Two Years by Major Demographics: NH BRFSS, 1987-1991.

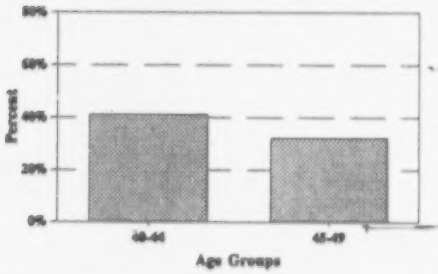
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (weighted data)					
Total	60	45	38	26	23	37
Age						
40 to 44	63	59	42	31	26	41
45 to 49	57	33	33	20	17	32
Education						
Less than H. S.	69	89	50	12	43	50
H. S. graduate	60	39	54	41	26	43
Some college	60	49	34	16	19	36
College	59	40	20	25	17	28
Graduate school	62	34	39	20	16	29
Income						
Less than $10,000	56	57	100	38	38	60
$10,000 - $20,000	65	73	63	35	36	56
$20,000 - $35,000	61	38	47	22	29	39
$35,000 - $50,000	51	44	40	42	33	42
More than $50,000	69	31	23	12	10	23
Marital Status						
Married	61	40	35	25	20	35
Divorced - Separated	49	62	45	24	32	41
Widowed	100	62	100	58	41	69
Never Married	39	86	100	40	32	51

Women Aged 40-49 Who Have Not Had a Mammogram in the Past Two Years by Major Demographics: NH BRFSS, 1987-1991.

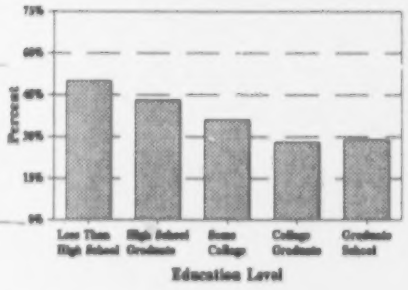
Women Aged 40-49 Who Have Not Had A Mammogram in the Past Two Years



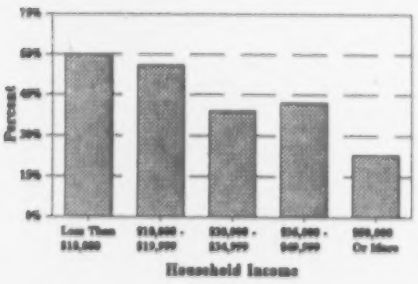
Women Aged 40-49 Who Have Not Had A Mammogram in the Past Two Years by Age Group



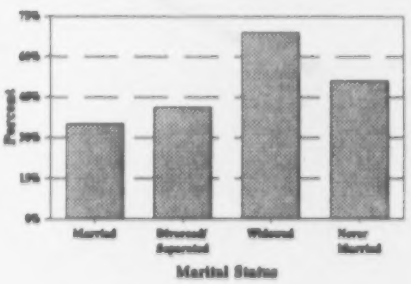
Women Aged 40-49 Who Have Not Had A Mammogram in the Past Two Years by Education Levels



Women Aged 40-49 Who Have Not Had A Mammogram in the Past Two Years by Household Income



Women Aged 40-49 Who Have Not Had A Mammogram in the Past Two Years by Marital Status



New Hampshire Behavioral Risk Factor Survey 1987-1991 Data

No Mammogram
In The Past Two Years
Women Age 40 to 49
State Average = 37%

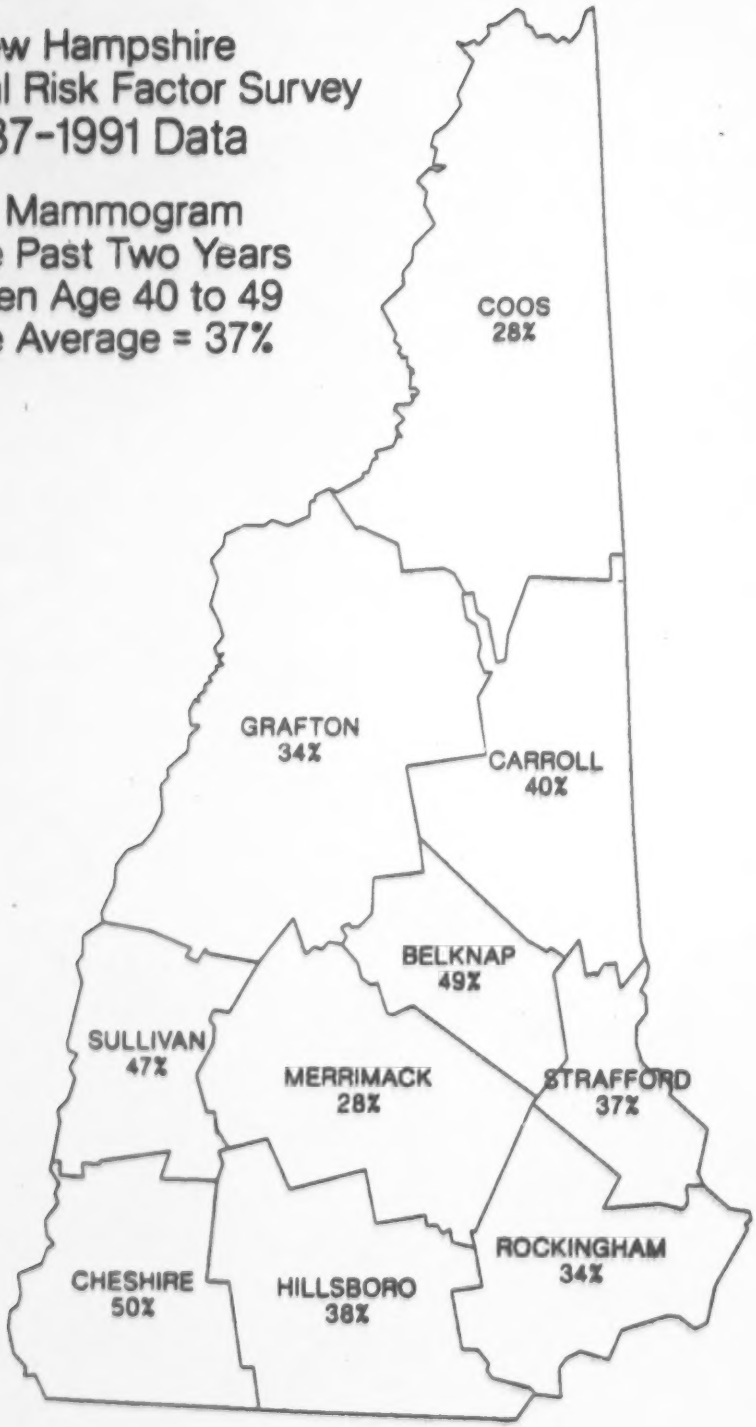
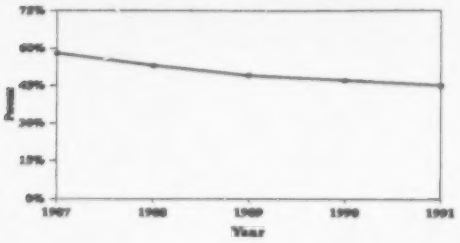


Table 14. Women aged 50 and older who have not had a Mammogram in the Past Year by Major Demographics: NHBRFSS, 1987-1991.

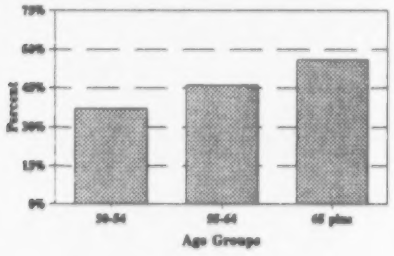
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (weighted data)					
Total	58	53	49	47	45	50
Age						
50 to 54	45	47	44	30	26	37
55 to 64	55	47	47	42	43	46
65 plus	64	60	51	55	51	56
Education						
Less than H. S.	79	55	58	56	54	61
H. S. graduate	46	55	50	49	53	50
Some college	60	29	51	37	41	44
College	50	59	35	50	25	43
Graduate school	51	66	32	35	20	42
Income						
Less than $10,000	75	53	58	62	61	63
$10,000 - $20,000	59	63	64	49	45	56
$20,000 - $35,000	50	54	43	41	38	45
$35,000 - $50,000	40	39	45	32	32	37
More than $50,000	31	31	40	39	15	31
Marital Status						
Married	47	51	44	44	39	45
Divorced - Separated	51	53	47	41	34	44
Widowed	80	58	58	54	61	62
Never Married	79	63	71	42	26	59

Women aged 50 and older who have not had a Mammogram in the Past Year by Major Demographics: NHBRFSS, 1987-1991.

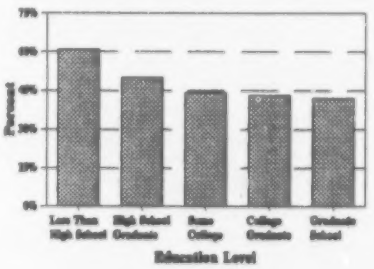
Women Aged 50 and Older Who Have Not Had A Mammogram in the Past Year



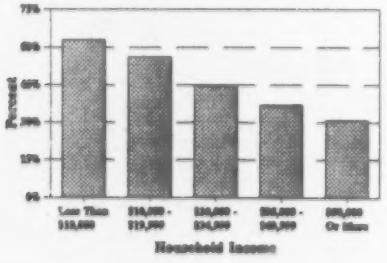
Women Aged 50 and Older Who Have Not Had A Mammogram in the Past Year by Age Group



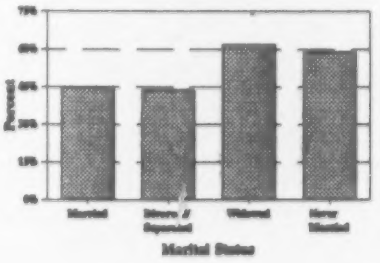
Women Aged 50 and Older Who Have Not Had A Mammogram in the Past Year by Education Levels



Women Aged 50 and Older Who Have Not Had A Mammogram in the Past Year by Household Income



Women Aged 50 and Older Who Have Not Had A Mammogram in the Past Year by Marital Status



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

No Mammogram
In The Past Year
Women Aged 50 And Older
State Average = 50%

Colorectal Cancer Screening

BRFSS definition

At risk = Those age 50 or older who have never had a proctoscopic exam.

Between the years 1987-1989, 1266 cases (32.5/100,000) of colon cancer and 543 cases (14.5/100,000) of cancer of the rectum were diagnosed in New Hampshire. 1130 deaths (17.4/100,000) due to colon cancer occurred and 241 deaths (3.7/100,000) due to rectum cancer occurred during the period 1985 - 1989[29] The United States mortality rates for colorectal cancer have decreased for both white males and females during the last decade as have rates in New Hampshire.[32] However, New Hampshire exhibits a higher mortality rate for both cancers compared to national rates, with males substantially higher than females. The earlier the stage of disease at diagnosis, the better the chances of survival. The 5 year survival rate for colorectal cancer when diagnosed at the local stage is 88%, when diagnosed at the regional stage is 57% and at the distant stage is 6%.[32] Precursors of colorectal cancer include adenomatous and familial polyps of the colon and rectum. Diets high in fat and/or low in fiber are also related to increased risk of colorectal cancer.[39]

The screening tests for colorectal cancer include fecal occult blood test which exams the stool to determine whether it contains blood; digital rectal exam where a doctor may physically detect tumors in the rectum and endoscopic procedures consisting of proctoscopy or sigmoidoscopy which involve placing an instrument in the rectum to look for tumors.

The American Cancer Society advocate flexible sigmoidoscopic exams every 3-5 years, in conjunction with yearly testing for fecal occult blood at age 50 and yearly digital rectal exam for those age 40 and over.[39] A recent case-control study concluded that screening by sigmoidoscopy can reduce mortality from cancer of the rectum and distal colon and that screening once every 10 years may be nearly as efficacious as more frequent screening.[40]

1991 Findings

Sixty-two percent of those 50 and older have never had a proctoscopic examination and are not in compliance with guidelines. Those age 50 to 54 have a much higher noncompliance rate than those age 55 and older. Women are more likely not to comply than men (57% compared to 66% respectively).

Trends

The percent of the population not in compliance with proctoscope screening guidelines has increased very slightly during the four year period between 1988 - 1991. During this same period males report slightly increased compliance rates while female rates have decreased. Other demographic groups showing fairly substantial increases in noncompliance include those with less than a high school education, those with some college, and those with household incomes at less than $10,000.

Four Year Composite (1988 - 1991)

As age increases, compliance for proctoscope examination increases (72% for those age 50-54 were not in compliance compared to 57% for those age 65 plus). Females (65%) report higher noncompliance than males (59%). For all other demographics, with only two exceptions, females were somewhat higher than males in noncompliance. The two exceptions include those with less than a high school education and those whose household incomes were $35-49,999.

Geographic Distribution (1988 - 1991)

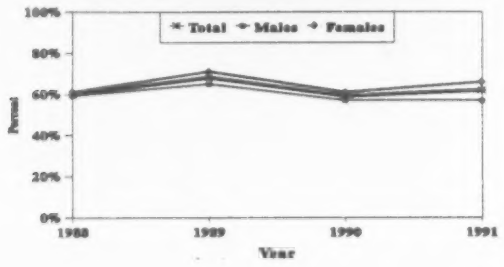
The highest noncompliance for proctoscopic examination in New Hampshire is reported in Coos (74%) and Sullivan (73%) counties. The lowest rates are found in Carroll county (56%) and Merrimack and Strafford counties (57%).

Table 15. Prevalence of Those Age 50 and Older Who Have Never Had a Proctoscopic Examination by Major Demographics: NHBRFSS, 1988-1991.

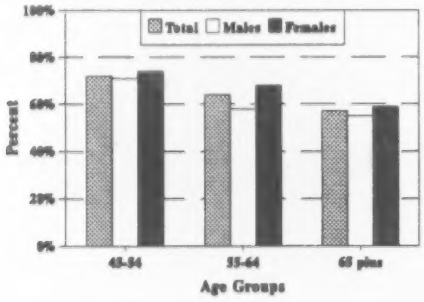
	1988	1989	1990	1991	Four year composite
	Percent of Sample (weighted data)				
Total	60	68	59	62	62
Age					
50 to 54	75	75	63	79	72
55 to 64	67	71	58	59	64
65 plus	50	62	59	58	57
Sex					
Male	59	65	57	57	59
Female	61	71	61	66	65
Education					
Less than H. S.	53	80	56	61	63
H. S. graduate	71	68	62	68	67
Some college	51	62	59	63	60
College	54	52	53	56	54
Graduate school	64	78	63	46	65
Income					
Less than $10,000	48	74	55	65	61
$10,000 - $20,000	63	59	64	68	63
$20,000 - $35,000	58	74	69	62	65
$35,000 - $50,000	69	60	58	62	62
More than $50,000	57	75	56	62	63
Marital Status					
Married	64	69	59	63	64
Divorced - Separated	66	76	41	66	63
Widowed	49	59	68	58	59
Never Married	45	61	45	75	56

Prevalence of Those Age 50 and Older Who Have Never Had a Proctoscopic Examination by Major Demographics: NH BRFSS, 1988-1991.

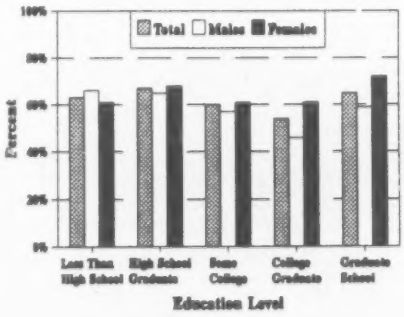
No Proctoscope Exam, Age 50 and Older by Year and Sex



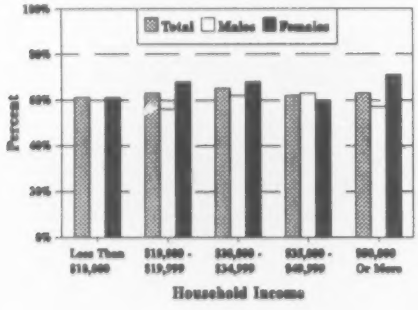
No Proctoscope Exam, Age 50 and Older by Age Group and Sex



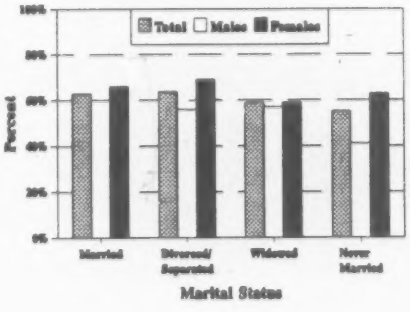
No Proctoscope Exam, Age 50 and Older by Education Levels and Sex



No Proctoscope Exam, Age 50 and Older by Household Income and Sex



No Proctoscope Exam, Age 50 and Older by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1998-1991 Data

No Proctoscopic Exam
Age 50 And Older
State Average = 62%

This page deliberately

left blank.

Cholesterol Screening

BRFSS definition

At risk = Those who have never had a cholesterol test.

High cholesterol = Respondents who reported a cholesterol level of 200mg/dl or higher, and/or those who have been told by a health professional that their cholesterol is high.

Elevated blood cholesterol is one of the three leading risk factors for coronary heart disease (CHD)--cigarette smoking and high blood pressure being the other two. A blood cholesterol less than 200 mg/dl is desirable. A blood cholesterol of 240 mg/dl or greater is considered high. About 25 percent of the adult population 20 years of age or older has blood cholesterol values at this level. Blood cholesterol levels between 200 and 239 mg/dl are borderline high.[41]

When elevated blood cholesterol is combined with other risk factors, the risk for CHD increases. Risk factors include high blood pressure, cigarette smoking, diabetes, vascular disease, obesity, being male and a family history of coronary heart disease before the age of 55.

Lowering an elevated blood cholesterol level will reduce the risk of heart attack and death caused by heart attack. Some studies have shown that for each 1 percent reduction in total cholesterol levels, there is a 2 percent reduction in number of heart attacks. That is, with a 10 percent reduction in cholesterol level, CHD risk drops 20 percent.[41]

Factors which may influence blood cholesterol level include diet, weight, genetic factors, sex, age, physical activity/exercise, alcohol, and stress. Of these factors, diet has the largest effect on blood cholesterol level. Consumption of saturated fat raises cholesterol levels more than any other food.[41]

The National Cholesterol Education Program of the National Institutes of Health recommends that adults with a cholesterol level of less than 200 mg/dl have their cholesterol rechecked in 5 years; all others should have their cholesterol remeasured annually. Those with a borderline-high total cholesterol and CHD or two risk factors or a high cholesterol should have a fasting lipoprotein analysis which includes measurement of total cholesterol, HDL-cholesterol, and triglycerides, and an estimation of LDL-cholesterol. The National Cholesterol Education Program has developed classification standards for adult LDL-cholesterol levels.[42]

1991 Findings

In 1991, high cholesterol was reported by 38% of NH residents who had their cholesterol measured; 27% indicated they had never been tested. The older age groups were more at risk with 48%, 50% and 49% reporting high cholesterol respectively. These same age groups reported more individuals being tested as well. Those with lower education and income had a greater number of individuals with high cholesterol and high percentages of never tested.

Trends

Individuals with high cholesterol increased from 22% to 38% of those tested between 1987 and 1991. Substantial increases in the incidence of reported high cholesterol are noted in all demographic categories as well. This may be due to the concomitant decrease in individuals who have **not** been tested for cholesterol (46% in 1987 compared to 27% in 1991). As more individuals are screened for high cholesterol more at risk will be identified and treated. Also, it is possible that due to less healthy lifestyles, those who delayed screening until recent years are at greater risk of high cholesterol than those who sought screening early.

Five Year Composite (1987 - 1991)

The prevalence of high cholesterol increases as age increases until middle age and then levels off. There appears to be little association between gender, age or income and elevated cholesterol. The prevalence of testing for cholesterol increases with age, education and income. There is little association between testing and gender.

Geographic Distribution (1987 - 1991)

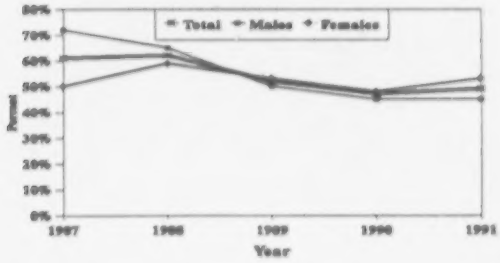
The highest incidence of elevated cholesterol was reported in Coos County (40%) which also had the highest (along with Grafton county) percentage of individuals who have never been tested for cholesterol at 41%. The lowest prevalence of high cholesterol was reported in Sullivan (27%) and Strafford (30%) counties. The highest prevalence of screening was found in Belknap (31% had never been screened) and Merrimack (32% had never been screened) counties.

Table 16. Blood Cholesterol Level Never Tested by Major Demographics: NHBRFSS 1987-1991.

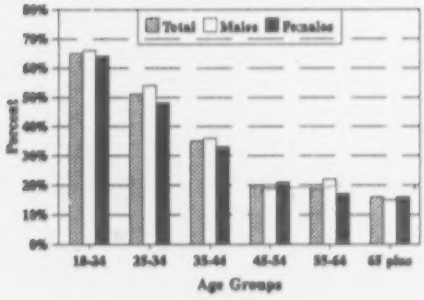
	1987	1988	1989	1990	1991	Five year composite
	Percent of Sample (Weighted data)					
Total	46	42	40	30	27	36
Age						
18 to 24	72	71	68	62	52	65
25 to 34	63	57	59	41	40	51
35 to 44	47	45	38	28	24	35
45 to 54	30	19	23	15	16	20
55 to 64	26	26	21	13	13	19
65 plus	21	19	17	15	9	16
Sex						
Male	49	39	39	36	32	38
Female	44	45	41	25	23	35
Education						
Less than H. S.	39	44	46	32	39	40
H. S. graduate	48	47	43	35	29	40
Some college	52	47	39	33	30	39
College	49	34	38	26	19	32
Graduate school	28	24	29	16	15	22
Income						
Less than $10,000	40	41	41	38	31	38
$10,000 - $20,000	54	47	44	33	26	41
$20,000 - $35,000	49	50	48	36	34	43
$35,000 - $50,000	49	41	37	27	28	35
More than $50,000	39	28	31	23	20	26
Marital Status						
Married	41	38	34	27	22	32
Divorced - Separated	44	38	40	28	30	35
Widowed	30	25	19	11	12	19
Never Married	66	62	64	49	51	58

Blood Cholesterol Level Never Tested by Major Demographics: NHBRFSS 1987-1991.

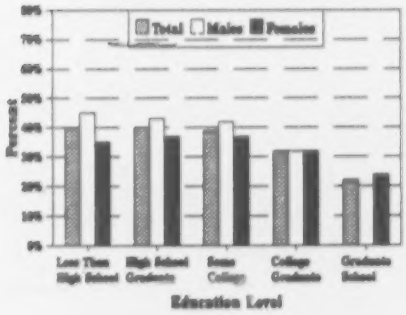
No Cholesterol Test by Year and Sex



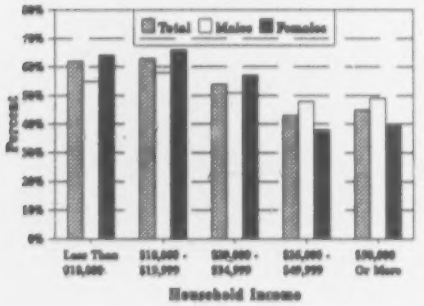
No Cholesterol Test by Age Group and Sex



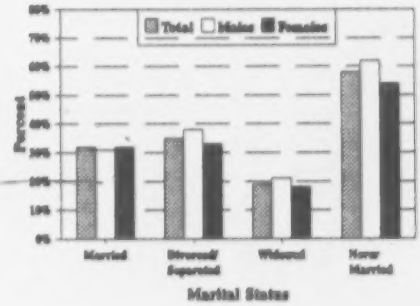
No Cholesterol Test by Education Levels and Sex



No Cholesterol Test by Household Income and Sex



No Cholesterol Test by Marital Status and Sex



New Hampshire
Behavioral Risk Factor Survey
1987-1991 Data

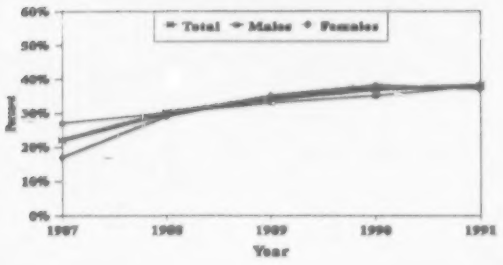
Those Who Have Never Had A Cholesterol Test
State Average = 36%

Table 17. Prevalence of High Cholesterol by Major Demographics: NH BRFSS, 1987-1991

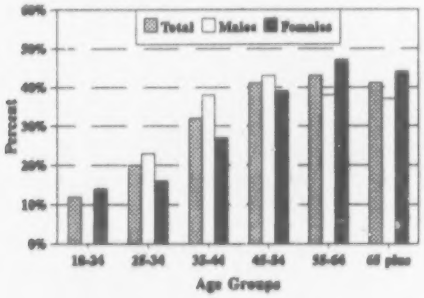
	1987	1988	1989	1990	1991	Five year composite
	(percent of weighted data)					
Total	22	30	34	37	38	33
Age						
18 to 24	0	7	10	18	18	12
25 to 34	13	17	23	17	24	20
35 to 44	18	25	39	37	33	32
45 to 54	26	35	46	44	48	41
55 to 64	27	42	40	51	50	43
65 plus	33	39	32	48	49	41
Sex						
Male	27	30	33	35	38	34
Female	17	29	35	38	37	33
Education						
Less than H. S.	27	36	40	37	48	38
H. S. graduate	18	28	34	41	41	34
Some college	18	29	34	36	34	32
College	27	27	31	30	32	30
Graduate school	24	33	31	36	37	33
Income						
Less than $10,000	29	41	29	44	42	37
$10,000 - $20,000	21	30	33	45	41	35
$20,000 - $35,000	18	29	38	34	39	33
$35,000 - $50,000	19	27	31	38	31	31
More than $50,000	24	29	34	33	37	33
Marital Status						
Married	23	31	36	39	39	35
Divorced - Separated	20	31	40	38	36	34
Widowed	34	36	37	45	52	42
Never Married	6	18	19	19	22	18

Prevalence of High Cholesterol by Major Demographics: NH BRFSS, 1987-1991

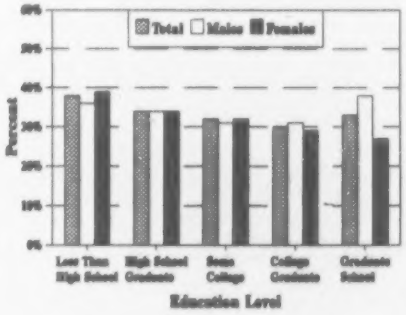
High Cholesterol Prevalence by Year and Sex



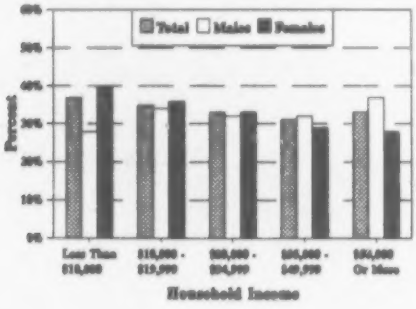
High Cholesterol Prevalence by Age Group and Sex



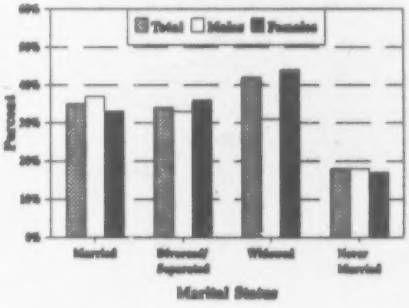
High Cholesterol Prevalence by Education Levels and Sex



High Cholesterol Prevalence by Household Income and Sex



High Cholesterol Prevalence by Marital Status and Sex



New Hampshire Behavioral Risk Factor Survey 1987-1991 Data

High Cholesterol Prevalence State Average = 33%

AIDS Awareness

BRFSS definition

AIDS = Individuals defined as infected with HIV or having AIDS.

It is estimated that one million Americans are currently infected with HIV.[43] Within 10 years of acquiring the virus, 50% will have developed AIDS and another 40% will have HIV related illnesses.[44] As of December 31, 1991, 206,392 cases of AIDS have been reported in the United States and territories. The number of known deaths nationally, since January 1981, totaled 133,233.[45] During the 1980s AIDS emerged as a leading cause of death among young adults in the United States. By 1988, HIV infection/AIDS had become the third leading cause of death among men 25-44 years of age, and by 1989, was estimated to be the second leading cause.[46]The HIV epidemic has heavily impacted men who have had sex with other men and injection drug users, representing 58% and 23% of all cases respectively. Forty-one percent of children with AIDS were born to women who contracted HIV through injecting drug use, and 17% were born to women who contracted HIV through sex with an injecting drug user.[45]

In New Hampshire it is estimated that between 1,875 and 2,775 of the state's residents are currently infected with HIV.[47] As of December 31, 1991, 248 cases of AIDS have been reported. Between January 1990 and December 1991, 105 cases or 42% of all cases were reported. 54% were men who have had sex with other men, 21% had a history of injecting drug use, and an additional 7% reported both risk behaviors.[48]

Since there is no effective vaccine or cure, current efforts are directed at preventing the transmission of HIV and prolonging the lives of individuals already infected. Effective means for reducing the risk of acquiring HIV exist. However, the adoption of such behavior change is mainly determined by the attitudes and behaviors of individuals who engage in high risk activity and the knowledge and attitudes of the community. The challenge is to communicate information that dispels unreasonable fear while promoting behavioral change to reduce the risk of HIV infection.

New Hampshire Findings (1990 - 1991)

In general, respondents aged 25 to 54 were more likely than their younger or older counterparts to have heard the AIDS virus called HIV, to know that drugs can lengthen the life of AIDS victims, and to know that people with AIDS can look well (Table 18). This overall pattern was repeated for those respondents with more education and greater household incomes. Men and women were equally likely to be knowledgeable on these questions.

Some atitudes relating to transmission of AIDS also showed marked differentials between demographic groups. When respondents were asked whether they would eat in a restaurant if the cook had AIDS, older, comparatively less educated., poorer and widowed individuals were more likely to answer, 'No'. This pattern was repeated in respondents queried as to whether they would work with a person who had AIDS. However, there was almost universal knowledge that a pregnant woman with the AIDS virus can give it to her baby.

Beliefs about the source of the AIDS virus is found in Table 19. Demographic findings are similar to those presented in the previous discussion for the areas of giving blood and mosquitoes as a conveyer of the AIDS virus. Those aged 25 - 54 are much less concerned about getting AIDS by donating blood. The same is true for the belief that mosquitoes can conduct the AIDS virus although the differences across age categories is small. In both areas males are more concerned than females about the possibility of contracting AIDS and as education and income increases, concern over contracting AIDS by giving blood or via mosquitoes decreases substantially. However, being cared for by a health professional who has AIDS as a possible source for the AIDS virus did not fit the demographic patterns described above and presented more random responses.

Table 20 presents data regarding AIDS and selected educational issues. The following responses include only those who report having children in kindergarten through grade eight; further examination of demographics requires caution due to low numbers in several groups. It is of interest to note, however, that younger parents age 18 - 24 seem more ambivalent about having their child in a class with a child with AIDS than older parents. A higher percentage of younger parents and females wish to have education about AIDS begin early in elementary school between grades K - 3. Education and income had little impact on AIDS and educational issues.

Data pertaining to perceived effectiveness of condom use in preventing the spread of the AIDS virus through sexual activity is found in Table 21. A total of 89% of New Hampshire residents sampled thought condoms were 'very effective' or 'somewhat effective' (38% and 51% respectively). A definite pattern emerged among respondents who felt condoms were 'very effective' with males, those aged 18 through 54, and those with more education and higher incomes indicating belief in their effectiveness.

Table 18. AIDS Knowledge, Attitude, Behavior, 1990-1991.

	Heard the AIDS Virus Called HIV	Drugs can Lengthen the Life of an AIDS Victim	People with AIDS can Look Well
	Percent of Sample Answering Yes (Weighted data)		
Total	88	69	88
Age			
18 to 24	87	59	94
25 to 34	91	72	92
35 to 44	94	76	91
45 to 54	91	71	89
55 to 64	83	71	79
65 plus	77	58	76
Sex			
Male	87	67	89
Female	89	70	88
Education			
Less than H. S.	74	56	76
H. S. graduate	85	60	85
Some college	91	74	93
College	93	75	92
Graduate school	97	83	93
Income			
Less than $10,000	79	62	82
$10,000 - $20,000	80	56	83
$20,000 - $35,000	87	65	90
$35,000 - $50,000	91	73	89
More than $50,000	95	76	92
Marital Status			
Married	89	71	89
Divorced - Separated	88	73	88
Widowed	77	59	74
Never Married	89	65	90

Table 18 (continued). AIDS Knowledge, Attitude, Behavior, 1990-1991.

	Would Eat in Resturant when Cook has AIDS	Would Work with Person who has AIDS	Pregnant Women with AIDS Virus can give it to Her Baby**
	Percent of Sample Answering Yes (Weighted Data)		
Total	38	86	99
Age			
18 to 24	46	87	99
25 to 34	45	91	99
35 to 44	39	93	100
45 to 54	42	88	99
55 to 64	29	78	100
65 plus	23	67	98
Sex			
Male	35	84	99
Female	42	88	100
Education			
Less than H. S.	30	75	98
H. S. graduate	30	83	99
Some college	44	87	100
College	44	90	99
Graduate school	53	95	100
Income			
Less than $10,000	30	78	100
$10,000 - $20,000	33	80	99
$20,000 - $35,000	35	86	99
$35,000 - $50,000	42	90	99
More than $50,000	44	91	99
Marital Status			
Married	39	87	99
Divorced - Separated	37	89	100
Widowed	16	68	97
Never Married	43	85	98

** 1991 data only

Table 19. Beliefs about the Source of AIDS Virus, 1990-1991.

	You Can Get Aids From:		
	Giving Blood	Mosquitos*	Being Cared for by Health Professional Who Has Aids**
	Percent of Sample Answering Yes (Weighted Data)		
Total	35	15	75
Age			
18 to 24	42	16	62
25 to 34	30	14	75
35 to 44	29	11	77
45 to 54	31	16	81
55 to 64	40	15	80
65 plus	44	20	74
Sex			
Male	36	16	77
Female	33	14	73
Education			
Less than H. S.	52	26	70
H. S. graduate	42	18	78
Some college	31	17	71
College	26	6	76
Graduate school	18	6	78
Income			
Less than $10,000	45	27	67
$10,000 - $20,000	48	24	73
$20,000 - $35,000	37	18	74
$35,000 - $50,000	27	11	73
More than $50,000	27	9	79
Marital Status			
Married	32	13	76
Divorced - Separated	38	16	80
Widowed	48	29	75
Never Married	40	15	71

* 1990 data only ** 1991 data only

Table 20. AIDS and Educational Issues, 1990-1991.

	Allow your Child in a Class with a Child who has AIDS	Grade AIDS Education Should Begin: K-3	4-6	7-10
	Percent of Sample Answering Yes * (Weighted Data)			
Total	94	58	36	7
Age				
18 to 24	83	69	31	0
25 to 34	93	59	35	6
35 to 44	94	58	36	7
45 to 54	98	55	38	7
55 to 64	100	23	46	31
65 plus	100	100	0	0
Sex				
Male	93	56	38	7
Female	96	61	33	6
Education				
Less than H. S.	93	59	36	5
H. S. graduate	93	60	33	7
Some college	91	52	40	8
College	96	59	36	6
Graduate school	98	64	32	4
Income				
Less than $10,000	87	76	19	6
$10,000 - $20,000	93	61	31	8
$20,000 - $35,000	92	60	33	7
$35,000 - $50,000	95	53	41	6
More than $50,000	95	60	35	6
Marital Status				
Married	94	58	35	7
Divorced - Separated	94	52	40	8
Widowed	100	82	18	0
Never Married	100	76	16	7

* Sample Includes only those adults with children in kindergarten thru grade eight.

Table 21. Perceived Effectiveness of Condoms in Preventing Aids, 1990-1991

	Very Effective	Somewhat Effective	Not Effective	Don't Know
	Percent of Sample (weighted Sample)			
Total	38	51	2	3
Age				
18 to 24	41	55	4	1
25 to 34	42	52	4	2
35 to 44	41	51	3	6
45 to 54	39	53	3	5
55 to 64	31	52	4	14
65 plus	27	43	7	24
Sex				
Male	42	48	3	7
Female	33	54	4	9
Education				
Less than H. S.	29	48	7	17
H. S. graduate	32	55	3	10
Some college	40	52	4	4
College	44	49	3	5
Graduate school	51	43	2	5
Income				
Less than $10,000	30	43	6	21
$10,000 - $20,000	30	51	7	12
$20,000 - $35,000	39	51	5	5
$35,000 - $50,000	44	50	2	4
More than $50,000	43	52	2	3
Marital Status				
Married	38	51	4	7
Divorced - Separated	39	48	5	8
Widowed	23	41	4	32
Never Married	40	53	3	4

This page deliberately

left blank.

References

1. Centers for Disease Control. (1992). Behavioral Risk Factor Surveillance, 1986-1990. MMWR, 41(8): 145.

2. U.S. Department of Health and Human Services. (1984). The Health Consequences of Smoking: Chronic Obstructive Lung Disease. A Report of the Surgeon General. Washington, D.C.: Office of Smoking and Health.

3. U.S. Department of Health and Human Services. (1989). Reducing the Health Consequences of Smoking: 25 Years of Progress. A Report of the Surgeon General. Washington, D.C.: Office of Smoking and Health.

4. U.S. Department of Health and Human Services. (1991). Healthy People 2000: National Health Promotion and Disease Prevention Objectives. Washington, D.C.: DHHS (PHS).

5. American Cancer Society. (1990). Cancer Facts and Figures. Atlanta, Georgia: ACS.

6. New Hampshire Division of Public Health Services. (1989). Vital Statistics, 1989, SAMMEC. Unpublished.

7. Colby, J. (1991). The Impact of Maternal Smoking on Infant Birthweight: New Hampshire Residents, 1987-1989. New Hamplshire Division of Public Health Services. Concord, New Hampshire.

8. LaPlace, J. (1987). Health. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

9. Samuels, M. and N. Samuels. (1988). The Well Adult. New York: Summit Books.

10. Leslie, P. (1988). Mature Stuff: Physical Activity and the Older Adult. Reston, Va.: American Alliance for Health, Physical Education, Recreation and Dance.

11. U.S. Department of Health and Human Services, Centers for Disease Control, Center for Health Promotion and Education. (1988). Promoting Physical Activity Among Adults. Atlanta, Georgia: Public Health Service.

12. U.S. Department of Public Health and Human Services. (1988). The Surgeon General's Report on Nutrition and Health. Washington, D.C.: U.S. Government Printing Office.

13. National Research Council Committee on Diet and Health, Food and Nutrition Board, Commission of Life Sciences, National Research Council. (1989). Diet and Health-Implications for Reducing Chronic Disease risk. Washington, D.C.: Academy Press.

14. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health. (1988). Eating for Life. Washington, D.C.: National Institutes of Health.

15. U.S. Department of Health and Human Services. (1988). Questions About Weight, Salt and High Blood Pressure, National Heart Lung and Blood Institute.

16. U. S. Department of Health and Human Services. (1981). FDA Consumer, The Story Behind Those High Blood Pressure Readings, U.S. Government Printing Office.

17. Ames, S.W., Kniesl, C.R. (1989). Essentials of Adult Health Nursing. Reading MA: Addison Wesley.

18. Porth, C.M. (1990). Pathophysiology: Concepts of Altered Health Status. (3rd ed) Philadelphia: J.B. Lippincott Company.

19. U.S. Department of Health and Human Services, Prevention '89/90: Federal programs in progress. (1990). Washington, DC.: U.S. Government Printing Office.

20. U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. (1986). The 1990 Health Objectives for the Nation: A Midcourse Review. Atlanta. Georgia: Public Health Service.

21. Hanson, J.W., Streissguth, A.P. and Smith, D.W. (1978). The Effects of Moderate Alcohol Consumption During Pregnancy on Fetal Growth and Morogensis. Journal of Pediatrics, 92: 457-460.

22. Harrington, J.A. (1987). Children of Alcoholics. American Family Physicians, 35: 139-144.

23. Perrine, M., Peck, R. and Fell, J. (1989). Epidemiologic Perspectives on Drunk Driving. In Surgeon General's Workshop on Drunk Driving: Background Papers. Washington, D.C.: U.S. Department of Health and Human Services.

24. National Association of State Alcohol and Drug Abuse Directors. (1992). Personal Communication, Unpublished data.

25. New Hampshire Highway Safety Agency. (1992). Personal Communication. Unpublished data.

26. Rice, P. MacKenzie, E. et al. (1989). Cost of Injury in the United States, A Report to Congress.

27. The National Committee for Injury Prevention and Control, Injury Prevention . (1989). Meeting the Challenge, Oxford University Press, New York, NY.

28. Committee on Injury Research, Commission on Life Sciences, (1985) National Research Council, Institute of Medicine, Injury in America, National Academy Press, Washington, DC.

29. New Hampshire Division of Public Health Services. (1992). Cancer in New Hampshire. Bureau of Disease Control. DPHS Report Number 91-010.

30. Centers for Disease Control. (1990). Black-White Differences in Cervical Cancer Mortality-US 1980-87. MMWR 39(15): 245-8.

31. American Cancer Society. (1990). MA Division, Cancer Manual, 8th Ed., Boston, MA.

32. National Cancer Institute. (1991). Cancer Statistics Review, 1973-1988. DHHS Pub. No. (NIH) 91-2789. Bethesda, MD: U.S. Dept. of Health and Human Services.

33. Bergner L., Steiner C., et al. (1989). Planning for Cervical Cancer Control-Report of the Southeast Public Health Working Group to the NCI. CCAB, NCI.

34. Centers for Disease Control: Chronic Disease Reports. (1989). Deaths from Cervical Cancer-U.S. 1984-1986. MMWR 38(38):650-54.

35. U.S. Dept. of Health and Human Services, Public Health Service. (1991). Cervical Cancer Control, Status and Directions. NIH Pub. No. 91-3223, Sept.

36. U.S. Dept of Health and Human Services, National Center for Health Statistics. (1990). Breast Cancer Risk Factors and Screening: US, 1987. Vital and Health Statistics. DHHS Pub. No. (PHS) 90-1500.

37. Testbook of Clinical Oncology. (1991). Holleg AI, Fink DJ, Murphy GP. (Eds). American Cancer Society, Atlanta, GA.

38. U.S. Preventive Services Task Force. (1989). Guide to Clinical Preventive Services: An Assessment of the Effectiveness of 169 Interventions. Report of the US Preventive Services Task Force. Baltimore, MD: Williams and Wilkins.

39. American Cancer Society. (1990). Cancer Manual, 8th ed. Boston: American Cancer Society, Massachusetts Division, Inc.

40. Selby J., Freidman G., Quesenberry A. (1992). A case-control study of screening sigmosdoscopy and mortality from colorectal cancer. The New England Journal of Medicine 326:653-657.

41. U.S. Department of Health and Human Services. (1989). Public Health Service, National Institutes of Health, So You Have High Blood Cholesterol, NIH Publication No. 89-2922.

42. U.S. Department of Health and Human Services. (1987). Public Health Service, National Institutes of Health. National Cholesterol Education Program, Highlights of the Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. NIH Publication No. 88-2926.

43. Centers for Disease Control. (1990). MMWR. 39(7): 110-119.

44. Hessol N.A., et al. (1988). The natural history of HIV infection in a cohort of homosexual and bisexual men: a decade of follow up. Proceedings of the IV International Conference on AIDS, Stockholm, Sweden, June 14.

45. Centers for Disease Control. (1991). Surveillance Report.

46. Centers for Disease Control. (1991). Mortality attributable to HIV infection/AIDS, United States: 1981-1990. MMWR, 40: 41-44.

47. New Hampshire Division of Public Health Services. (1990). HIV-AIDS in New Hampshire. Surviellance Report. STD/HIV Program.

48. New Hampshire Division of Public Health Services. (1991). AIDS Update. STD/HIV November-December.